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ABSTRACT

A 3-year, three-part study investigated the learning strategies (LS) of children in grades 1-4 learning a foreign language (French, Spanish, Japanese) in an immersion setting and assisted immersion teachers in using LS for instruction. A sample of 72 high-rated and low-rated students were followed for 2 to 3 years. Professional development activities familiarized teachers with ways of incorporating LS into curricula. Data were gathered from students using think-aloud interviews and questionnaires concerning LS use and self-efficacy, and from teachers using interviews. Research focused on: (1) which LS are used by more effective and less effective learners; (2) whether and how the strategies change over time; (3) whether students using LS more frequently perceive themselves as effective language learners; (4) differential LS use by language; (5) relationship between language proficiency and LS use; (6) types of teacher development supportive of LS instruction in language immersion; and (7) immersion teachers' beliefs about effectiveness of LS instruction. Results are reported and discussed. Appended materials include information on LS, questionnaires, and interview forms. Contains 37 references. (MSE)

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LEARNING STRATEGIES IN ELEMENTARY LANGUAGE IMMERSION PROGRAMS

FINAL REPORT

Reporting Period:
FY1993-1996

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LEARNING STRATEGIES IN ELEMENTARY

IMMERSION PROGRAMS

FINAL REPORT

Reporting Period
FY 1993-1996

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Learning Strategies in Elementary in Language Immersion Programs

I: Introduction

The focus of this final report on the study ***Learning Strategies in Elementary Language Immersion Programs*** (PR/Award Number PO17A30098) is on the methodology, results, and implications of research conducted by Georgetown University's Language Research Projects for the three year period beginning in October 1993. In addition to the research reported here, related research conducted in the same project schools is described in the final report for the Georgetown University/Center for Applied Linguistics **National Foreign Language Resource Center** (1996).

The purposes of the study were to investigate the learning strategies of elementary school children learning a foreign language in an immersion setting and to provide assistance to immersion teachers in implementing learning strategies instruction.

Learning strategies are the actions and thoughts that individuals can use to understand, recall, and use information. Learning strategies are goal-directed and intentional on the part of the learner (Weinstein & Meyer, 1986). They can be applied to many aspects of learning, including cognitive and academic tasks, language learning, social interaction, and affective control. In language learning, strategies have been identified for all language modalities (listening, reading, speaking, writing) as well as for vocabulary and grammar (Chamot, Barnhardt, El-Dinary, Carbonaro, & Robbins, 1993; Chamot, Robbins, & El-

Dinary, 1993; O'Malley & Chamot, 1990; Oxford, 1990; Rubin & Thompson, 1994).

The role of learning strategies has been extensively studied with children learning in native language contexts and, to a lesser degree, with older language learners. Considerable success has been achieved in teaching elementary school children to use learning strategies in first language contexts (Pressley, Woloshyn, & Associates, 1995), but research in second language elementary school contexts has focused on the description of learning strategies used in English by bilingual students (Padron & Waxman, 1988). Research with older students, however, has shown that effective language learners use strategies more appropriately than less effective language learners, and that learning strategies can be taught to both secondary and college level second language students (Chamot, 1993; Chamot & Küpper, 1989; Cohen & Aphek, 1981; O'Malley & Chamot, 1990; Rubin, Quinn, & Enos, 1988; Thompson & Rubin, 1993). The application of this research to younger students in language immersion programs holds promise for developing an understanding of their learning processes and ways for helping them learn even more effectively.

In summary, prior research has shown that effective language learners use strategies more appropriately than less effective language learners, and that learning strategies can be taught to both secondary and college level second language students. Considerable success has also been reported in teaching elementary school children to use learning strategies in first language contexts. Prior to this study, however, the learning strategies used by children in foreign

language immersion settings and the effects of learning strategy instruction in such settings had not been investigated.

Language immersion programs are characterized by a focus on learning school subjects through the medium of a second language, rather than an exclusive focus on the language being learned. Children in immersion programs typically begin in kindergarten or first grade and continue through the elementary years. In partial immersion programs, some subjects are taught in the target language and others in English, while total immersion programs teach initial literacy and mathematical skills as well as other subjects through the second language. In total immersion programs literacy in children's native language is typically introduced in second grade or later, and the curriculum may gradually shift to a balance of foreign and native language instruction (Curtain & Pesola, 1988; Met & Galloway, 1992).

Immersion programs in French were initiated in Canada in the 1960's, and in Spanish in the United States in the early 1970's (Campbell, 1984; Lambert & Tucker, 1972). More than two decades of research indicate that this approach is highly effective in developing an impressive level of foreign language proficiency in English-speaking children and grade-level or above achievement in English skills and content subjects (Curtain & Pesola, 1988; Genesee, 1987; Swain, 1984). The thrust of this research has been on the linguistic and academic products of immersion education rather than on the teaching and learning processes involved (Bernhardt, 1992). Thus, while we know the levels of achievement attained by children in language immersion programs, we have

little knowledge about how they reach those achievement levels. In particular, the learning strategies used by children in foreign language immersion settings and the effects of learning strategy instruction in such settings remained largely unexamined prior to this study.

The connection between second language learning and learning strategies becomes even more important with the emphasis on content subject learning in language immersion classrooms. The accumulated evidence supporting the use of learning strategies with first language content areas tasks, and the initial evidence supporting the use of learning strategies in second language learning both point to the importance of combining strategy instruction with second language content. There is a need for integrated instructional models in which strategies are combined with content instruction in second language classrooms. Instructional approaches for integrating content instruction with learning strategies have been developed both in English as a second language (Chamot and O'Malley, 1986; 1993; Mohan, 1990) and secondary foreign language classrooms (Chamot, 1992; Chamot and Küpper, 1989; Oxford, 1990). The extension of such instructional approaches to elementary school foreign language immersion programs can be expected to meet with similar success.

The study reported here has built on previous work conducted by the research team at the Georgetown University/Center for Applied Linguistics National Foreign Language Resource Center and Georgetown University's Language Research Projects. These research studies have investigated

learning strategies in high school and college Japanese, Russian, and Spanish classrooms (Chamot, Barnhardt, El-Dinary, Carbonaro, & Robbins, 1993; Chamot, Robbins, & El-Dinary, 1993).

As a result of these and earlier learning strategies studies, three broad categories of learning strategies were adopted to account for the different types of strategies reported by both foreign language and ESL students (see, for example, O'Malley & Chamot, 1990). These categories are: *metacognitive strategies* which involve planning, monitoring, or evaluation of a learning task, and can be used as executive control mechanisms for virtually any learning activity (Derry, 1990); *cognitive strategies*, which involve manipulation of the material to be learned or recalled; and *social/affective strategies*, in which learners interact with others or use affective control to facilitate a learning task. These categories have been successfully used to classify the strategies identified in a variety of studies of secondary and adult language learners, though there has been some variation of specific strategies within each major category (see, for example, Absy, 1992; Barnhardt, 1992; Chamot & Küpper, 1989; Chamot, Barnhardt, El-Dinary, Carbonaro, & Robbins, 1993; Chamot, Robbins, & El-Dinary, 1993; Lott-Lage, 1993; Nagano, 1991; O'Malley & Chamot, 1990; Rubin, 1987; Vandergrift, 1992).

The learning strategies identified in this study of elementary language immersion students can also be classified into the three categories of metacognitive, cognitive, and social/affective strategies, though the individual interviews with children provided few opportunities for strategies in the

social/affective category to be reported. While the hierarchical classification scheme that emerged from the data is more complex than previously developed schemes, it is also superior in flexibility and is more useful in showing relationships between strategies. Table 1 lists and defines briefly the major learning strategies identified in this study. More detailed strategy descriptions are presented in Chapter III, and the Hierarchical Strategies Classification Scheme used to code the strategies reported in the interviews appears in Appendix A.

Table 1

Major Learning Strategies

Major Metacognitive Strategies	**Examples of Applications**
Planning	Making a general plan, previewing task, setting a goal, organizational planning, planning a section or part of the task, self-management of task.
Monitoring	General monitoring of the task, monitoring strategies in use, monitoring sense of the material, auditory monitoring, verifying performance, self-correction.
Selective Attention	Focusing on aspects of the text, such as title, pictures, linguistic features, pronunciation, re-reading.
(Evaluation)	Judging how well a task has been accomplished, whether the goal was met, and assessing the success of learning strategies used.

Major Cognitive Strategies	**Examples of Applications**
Using Background Knowledge	Making inferences from an oral or written text or accompanying picture; making general predictions about a text, such as using the title or accompanying picture to anticipate the next part; using elaboration to connect background knowledge to new information.
Using Linguistic Knowledge	Using specific knowledge about the L2 and/or the L1 to complete a task, such as decoding words by sounding them out, making deductions, making substitutions, recognizing cognates, and borrowing and mixing between the two languages.
Manipulating Information	Transforming a text to understand it by retelling it, translating to the L1, summarizing it, taking notes, or representing it graphically.
(Using Resources)	Using reference materials such as books, dictionaries, videos, or computer programs to find information needed to complete a task.

Major Social/Affective Strategies	**Examples of Applications**
(Cooperation)	Working with classmates to complete a task, solve a problem, or get feedback.
(Questioning for Clarification)	Asking for clarification, explanation, confirmation, re-phrasing, or an example.

Note: Strategies in parenthesis were not reported by students in think-aloud interviews. However, these strategies have been reported in other studies of older students. Constraints of the interview situation probably accounted for the absence of strategies such as Self-evaluation, Using Resources, and Cooperation.

This study began by investigating the learning strategies reported by students in foreign language elementary school immersion classrooms through observations, interviews, and questionnaires. A sample of high- and low-rated students were followed for two to three years. Professional development activities for teachers were conducted to familiarize teachers with ways of

incorporating learning strategy instruction into their curriculum.

Research questions addressed over the three years of this study focused primarily on students in elementary immersion classes. In addition, data from teacher interviews and workshop evaluations provided insights into the integration of learning strategy instruction into immersion curricula. The research questions were as follows: (1) Which learning strategies are used by more effective and less effective learners in elementary foreign language immersion programs? (2) Do these strategies change over time, and if so, how? (3) Do students who use learning strategies more frequently perceive themselves as more effective language learners? (4) Are different learning strategies used more frequently with specific languages? (5) Are students who use learning strategies more frequently rated higher in language proficiency? (6) What types of teacher development can support strategies instruction for language immersion classrooms? (7) Do immersion teachers believe that strategies instruction improves their students' language learning?

This report is organized into six chapters. This introductory chapter describes the purposes of the study, provides a brief overview of relevant literature, and presents the general strategy classification scheme which was used to code interview data. The second chapter gives an overview of the design and methodology of the study, including the context, the subjects, and data sources. Chapter Three addresses research questions 1, 2, 4, and 5 by presenting the results of first through fourth grade immersion students' think-aloud interviews. Chapter Four provides information related to research

questions 3 through the results of learning strategy and self-efficacy questionnaires administered to fourth, fifth, and sixth graders participating in the study. Chapter Five addresses research questions 6 and 7 by presenting an analysis of data obtained from teachers in the immersion classrooms studied.

Finally, the sixth chapter summarizes the three sub-studies reported in Chapters 3, 4, and 5, and then discusses instructional implications. The Appendices provide samples of the instruments.

II. Overview of the Research

Three different approaches have been implemented to answer the research questions:

- A study of the learning strategies of immersion students in Grades 1 through 4 in French, Spanish, and Japanese immersion programs was conducted using Think Aloud interviews. One-half of the subjects were rated as highly effective learners by their teachers and one-half was rated as low effective learners. The Think Aloud interviews were coded according to a Hierarchical Classification Scheme that was developed to classify the reported strategies . A description of the strategies used on a Reading Task and a Writing Task in the foreign language is presented for Grades 1-4 in the report. The effects of Grade, Language of Study, and Teacher Rating on strategy frequency were tested. This analysis provides a detailed description of elementary immersion students' use of learning strategies and information about similarities and differences in high- and low-rated students, students at different grade levels, and students of different foreign languages. The ranges of different strategies that the students used were also calculated and analyzed by Grade, Language, and Rating.
- Two questionnaires were developed: one to assess the degree to which elementary primary students use learning strategies and one to

assess students' feelings of self-efficacy. The two questionnaires were compared to determine whether students who use more learning strategies also perceive themselves as more effective learners.

- A study of teacher evaluations of the effectiveness of teaching learning strategies to elementary foreign language immersion students was conducted and reported. A report on workshops for foreign language immersion teachers is included.

The three studies that constitute this report were conducted with the same three participating public schools with elementary language immersion programs. The schools are located in the Washington, D.C. suburbs. One school includes a French immersion program, one school a Spanish immersion program, and one school a Japanese immersion program. The French and Japanese programs include grades kindergarden through the sixth grade, the Spanish program terminates after the fifth grade. The French and Spanish programs are full immersion language programs, the children study only in the target language. Starting in the fourth grade, the students study English one period a day. The Japanese program is partial immersion; the children receive instruction in Japanese in Japanese language arts, mathematics, science, and health for half of each day, and then spend the remainder of the day in English.

Most of the students in these programs come from native English-speaking families. Only a few children in the Japanese program have a Japanese-speaking parent. In the Spanish program, a somewhat larger number of children have a Spanish-speaking parent or parents. In the French program

the majority of students also have native English-speaking backgrounds, but a number of Francophone African and Haitian students are enrolled in this program as well.

The teachers in the participating immersion programs are native or near-native speakers of the target languages. They all hold either permanent or provisional elementary teaching certificates for the states in which they teach, and many also have teaching credentials and experience from their native countries. Participating teachers have all received considerable preparation and professional development in immersion philosophy and methodology through inservice workshops and/or university course work. The teachers express enthusiasm for immersion education, are rigorous in providing instruction virtually exclusively in the target language, and devote considerable efforts to developing appropriate materials and techniques to help their students learn the subject matter through the medium of a foreign language.

The immersion programs follow the state determined curricula for each grade. Many of the materials used are teacher constructed or translated by the teachers into the target language. The target language itself is not studied directly as a subject. Rather it is the medium through which the children learn the same content material as children in the same state who receive their instruction in English.

III. Learning Strategies in Grades 1 - 4 Foreign Language Immersion.

Introduction

This research represents the first systematic study and description of strategy use by a groups of elementary language immersion students. The focus of this analysis will be a description of the strategies used by the students when reading and writing in the target language.

Method

Subjects

A total of 72 subjects participated in this experiment. Table 2 provides a summary description of the students.

Table 2.

Description of Language Immersion Subjects by Language of Program, Grade, and Teacher Rating

Language	Grade			
	G1	G2	G3	G4
French	3 High	3 High	3 High	3 High
	3 Low	3 Low	3 Low	3 Low
Spanish	3 High	3 High	3 High	3 High
	3 Low	3 Low	3 Low	3 Low
Japanese	3 High	3 High	3 High	3 High
	3 Low	3 Low	3 Low	3 Low

The students who participated in this study were selected from the general population of immersion students described above. These students were all native English speakers and they all spoke only English in the home. No students were included who had known disabilities or problems such as learning disabilities, attention deficit disorder, severe emotional problems, or medical conditions that could in any way influence learning in a foreign language. All students included in this analysis had participated in a language immersion program since kindergarten or first grade.

The students were drawn in equal numbers from Grade 1 through Grade 4. . One-third of the students participated in the French full immersion program, one-third in the Spanish full immersion program, and one-third in a Japanese partial immersion program.

Teachers with participating classes rated all their students' language proficiency as high (exceeds expectations), average (meets expectations) or low (fails to meet expectations). The ratings were made independent of how other students were rated in the class so if a teacher had an exceptional class, half could be rated as high or vice versa, while if a teacher had poor class the majority could be rated as low. Three high- and 3 low-rated students were chosen from the full class lists on the basis of the ratings. An example of the Teacher Rating Form is included in Appendix B

Instruments and Procedures

Student Think Aloud Interviews

A detailed protocol for the Think Aloud interviews was developed. The protocol contained scripted information for the warm-up, practice, and reading and writing sections of the interview. In addition, it gave information on how to determine the correct reading level of a student, guidelines for using English and the target language, and a list of necessary materials and equipment. After studying the guide, interviewers participated in training sessions that included watching models of Think Aloud interviews and receiving coaching as they conducted mock interviews with the scripts. For the actual Think Aloud interviews, the interview script was translated into the appropriate target language. See Appendix C for the Think Aloud immersion protocol.

Think Aloud interviews were conducted in the Spring of 1994, 1995, and 1996. Each student was interviewed individually using the Think Aloud protocol. The interviewers were all native or near-native speakers of the target language. Think Aloud procedures were designed to capture children's reported mental processing as they worked on two typical school tasks: reading an excerpt of authentic children's literature in the target language and writing a story from a picture cue.

Researchers worked with teachers to identify appropriate task levels for each grade. The tasks were to contain new and challenging content, but were to be structured like familiar classroom tasks. On the Reading Task all students

began with a challenging, but grade appropriate, text. If the text was too easy for the student and did not elicit strategy use, the student was moved up to a more difficult text. If the first text was too difficult for the student, she was moved to an easier text. A bibliography of readings in each language is provided in Appendix D. For the writing task, students were presented with six pictures and were asked to choose and write a story about one picture.

In each interview the researcher first explained the purpose of the interview in both the target language and English, telling students they would be asked to describe their thoughts as they worked on the tasks. The remainder of the interview was conducted primarily in the target language, but researchers switched to English when necessary and assured children that they could describe their thinking in either English or the target language or in a mixture of the languages. The objective of the language switching was to ensure that younger and weaker students were provided the same opportunity as older or more effective students to explain and describe their strategy use.

After explaining how to think aloud, the interviewer modeled thinking aloud while solving a picture puzzle; the interviewer asked the student to restate what the interviewer had said, praising students for identifying the verbalized thinking. At the end of this task (and each subsequent task), the interviewer gave the student a small prize. The researcher then asked the student to try thinking aloud. For this practice, students worked through a logic problem and the interviewer prompted with questions like, "What are you thinking now? How did you figure that out?" Similar prompts were used for the data collection tasks,

about 10 minutes of reading and 10 minutes of writing. For all Think Aloud tasks, interviewers frequently gave open-ended prompts to encourage thinking aloud; they also requested clarification and elaboration of students' comments with questions like, "Why do you say that? How does that help?"

The Hierarchical Classification Scheme

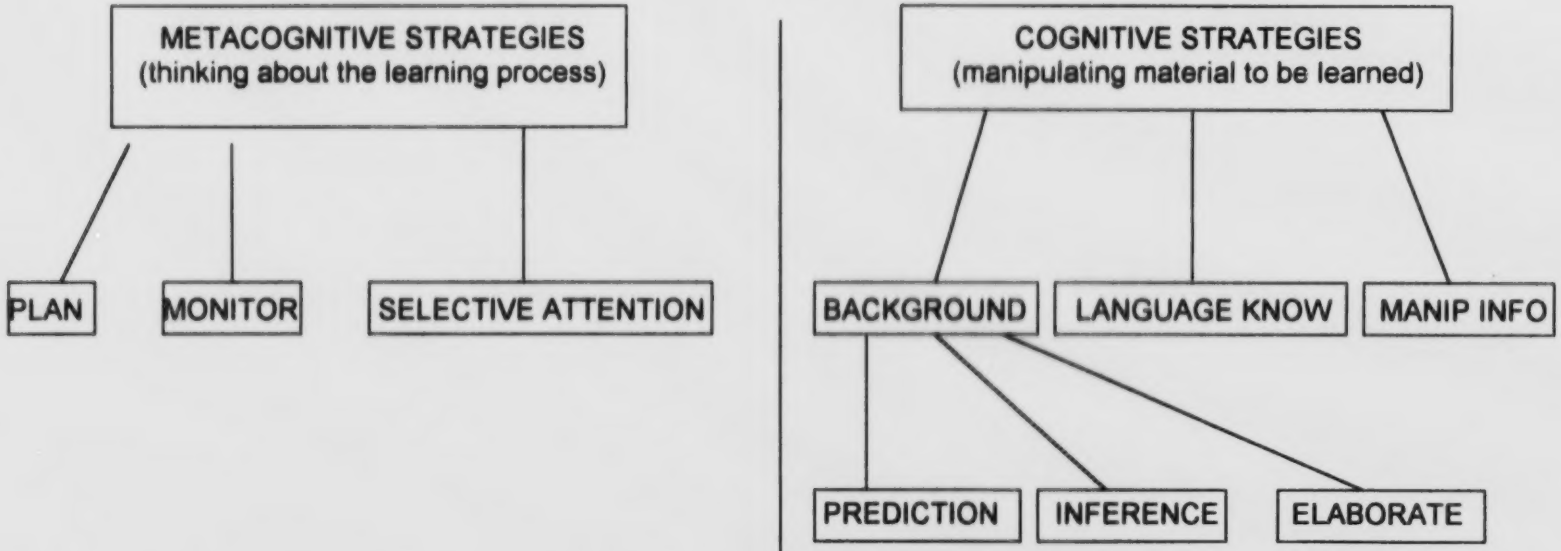
The Think Aloud interview transcripts were reviewed, along with an equal number of transcripts of Think Aloud interviews with high school students taking foreign language core courses, in order to identify and describe all the different strategies used by students who study a foreign language. Each strategy observed was named, described, and multiple examples of behaviors exemplifying the strategy were collected. This list was added to and modified in the course of three years research. The result is a detailed list of all strategies observed in immersion and in foreign language core course students at levels Grade One through High School. Eighty-two different strategies were identified and described.

The next step in the development of the Hierarchical Classification Scheme was to organize the specific strategy behaviors by categories in order to identify the relationships between different learning strategies. These categories were then organized by more general categories, and these by more general categories. This hierarchical organization allows the researcher, or teacher, to make clear and delimited inferences about general learning strategy use of students from specific behaviors. In previous research we had divided strategies into general categories, as have others. However, the categorizing of

learning strategies had not been carried out previously as a model of learning strategy organization.

Figure 1 provides a graphic description of the Hierarchical Classification Scheme. The most general distinction drawn between learning strategy use is between Metacognitive strategies, thinking about the learning process, and Cognitive strategies, manipulating material to be learned. Within Metacognitive strategies, Planning, Monitoring, and Selective Attention constitute major categories of learning strategies. Each of these categories is made up of more specific behaviors. For instance, Planning includes Previewing, Organizational Planning, and Self-Management. Each of these categories includes more specific strategies: when a student previews she can either preview the genre or organizing principle of a text or she may preview a text for the main idea or topic.

HIERARCHICAL SCHEMA OF LANGUAGE LEARNING STRATEGIES



Plan: *previewing, proposing strategies, generating plans.*	**Background**: *make connections between information on task and background knowledge through inference, prediction, or elaboration.*
Monitor: *checking, verifying, correcting.*	**Language Knowledge**: *using specific language information such as decoding or cognates to accomplish task.*
Selective Attention: *attending to specific aspects of task.*	**Manipulate Information**: *transforming information through retelling, summarizing, or translating to process.*

The Cognitive strategies are subdivided into using Background Knowledge to make connections between information on the task and background knowledge, using Linguistic Knowledge, and Manipulating Information, transforming information in order to extract meaning. The strategy category Background Knowledge includes three frequently used and highly related subcategories: Prediction, Inferencing, and Elaboration. Each of these categories and subcategories is further defined by more specific strategy categories and behaviors. For instance, there are a number of different Inferencing strategies: Inferencing (Picture), making an Inference on the basis of a picture, Inferencing (Text), Inferencing (Number), Inferencing (World Knowledge), and Inferencing (Knowledge of Literature/Media).

Two further Cognitive strategy categories that were included in the overall strategy hierarchy are Resourcing, using resources to obtain information, and Recalling, strategies to recall L2 vocabulary. These two strategy categories were not included in the coding of the immersion data because the nature of the interview with immersion students did not lend itself to revealing Resource or Recall strategies. Social Affective strategies were also not included.

Appendix A includes the full Hierarchical Classification Scheme Coding Reference and Index. Each category and subcategory of learning strategy is named, described, and examples are given of behaviors that define the strategy. For instance, if a child looking at a picture of a wolf which accompanies a text, says, "He is hungry and he is going to eat somebody," we

know that she used the learning strategy Prediction (Picture), she has used the strategy to predict what will happen in the story from the picture. We also can say, at a more abstract level, that this child makes predictions about the text, she guesses what will happen. Since Prediction is a Background Knowledge strategy we can say at an even more abstract level that this child uses her background knowledge and relates it to the text to construct meaning from the text. And since Background Knowledge is a Cognitive strategy, we know that this child actively manipulates information in order to process the text.

The Hierarchical Classification Scheme devised for this research allows the description, identification, and classification of very specific behaviors while it also provides the basis for general inferences about the kinds of learning strategies language students use from an analysis of specific behaviors.

Coding Procedures

Two researchers independently coded each of the 72 interviews according to the Hierarchical Classification Scheme described above. One coder, the interviewer, was a speaker of the target language and the other was a researcher who was coding interviews across languages. The two codings were then compared item-by-item. The intercoder agreement on the items was 83.1%. The codes that were not identical were discussed by the two coders, and the disagreement was resolved in one of five ways:(1) If one coder coded a behavior as a particular strategy and the other coder agreed immediately with the coding, then the code was listed as an "Addition," and included in the data. Additions accounted for 7.3% of the data. (2) If one coder coded an item as one

specific strategy within a particular strategy category, and the other coder coded the item as another specific strategy within the same category, then the item was coded as a general instance of the strategy category, but not as an instance of either specific strategy. Of all the items coded, 2.5% were instances of discrepancies resolved within categories. (3) If one coder changed his/her coding on the basis of the other coder's decision, the behavior was included in the data as an instance of the agreed upon strategy; 2.6 % of the data consisted of these resolved discrepancies. (4) If one coder coded a behavior as an instance of a strategy, the other coder did not, and the first coder agreed in discussion that the initial coding was in error, the coding was dropped from the data. This occurred in 4.5 % of the data. (5) If coders agreed that a behavior had occurred and could not agree on the specific strategy or on the strategy category, then the item was dropped from the data. These unresolved discrepancies accounted for 0.1% of the data. The instructions to coders and a sample tally sheet are included in Appendix E.

The final codings for each student were tallied. Raw scores for each student on each specific strategy were computed as were total scores for each strategy category.

Results

The focus of this analysis will be a description of the strategies used by the students when reading and writing in the target language. The description will focus on analyzing the students strategy use at the level of categories of strategies with reference to specific strategies and behaviors whenever possible.

The first step in this analysis was to examine the mean proportions of total strategy use of each of the strategy categories on the Hierarchical Classification Scheme on the Reading Task and the Writing task separately. Then relative sizes of the mean proportions of each strategy category were compared across tasks. This comparison was carried out to systematically compare the contributions of the different kinds of strategies on each task. It provides a general picture of the salience of each strategy category on each task before the students' behaviors are described in detail.

The elementary immersion students' strategy use will then be described in detail for each task by strategy category. Strategies observed will be defined, described, and examples of the most frequently used specific strategies within each category will be given. Also, the generality of each description was tested by analyzing overall scores by Grade (Grades 1&2 and 3&4 have been collapsed into composite groups), Language of Program, and Teacher Rating. If any of these factors produced significant effects, the effects were explored. Also, when possible, the most frequently used specific strategies in the strategy category were subjected to post hoc tests for the same effects.

The ranges of students' strategy use, how many different kinds of strategies they employ, will then be described and analyzed by Grade, Language, and Rating.

Overview of Strategies Used in Reading and Writing

The behaviors observed during the think aloud interviews were coded as specific strategies according to the definitions given in the Hierarchical Classification Scheme described above. Each specific strategy was categorized by its function as belonging to one of eight strategy categories: Planning, Monitoring, Selective Attention, Inferencing, Elaboration, Prediction, Using Linguistic Knowledge, and Manipulating Information. The total raw scores across subjects for all specific strategies for the Reading and Writing tasks separately and for the tasks combined are given in Appendix F.

For both Reading and Writing, each subject's total score of specific strategies in each strategy category was converted to a relative frequency score. The relative frequency scores are calculated by counting the number of instances of a particular strategy for each individual and then dividing the total number of instances of the specific strategy for each individual by his/her total strategy score. This procedure yields a mean proportion value for that specific strategy for each individual. To get an average for all 72 subjects, a mean is calculated from the 72 individual mean proportion scores. This represents the average mean proportion score for a particular strategy across the group of 72 subjects.

The average mean proportion scores and standard deviations for each strategy category for Reading and Writing are displayed in Table 3.

Table 3.

Mean Proportions (and Standard Deviations) of Total Strategy Use for Reading and Writing by Strategy categories

STRATEGY	READING M	READING SD	WRITING M	WRITING SD
PLANNING	.02	.06	.28	.23
MONITORING	.10	.10	.17	.20
SELECTIVE ATTENTION	.09	.11	.06	.11
INFERENCING	.15	.13	.01	.04
ELABORA-TION	.11	.12	.19	.23
PREDICTION	.06	.09	0	0
USING LINGUISTIC KNOW-LEDGE	.40	.23	.24	.25
MANIPULATE INFO	.06	.09	.04	.1

The mean proportions of categories will be described separately for Reading and Writing.

A graphic representation of the mean proportions of strategy categories in Reading is displayed in Figure 2.

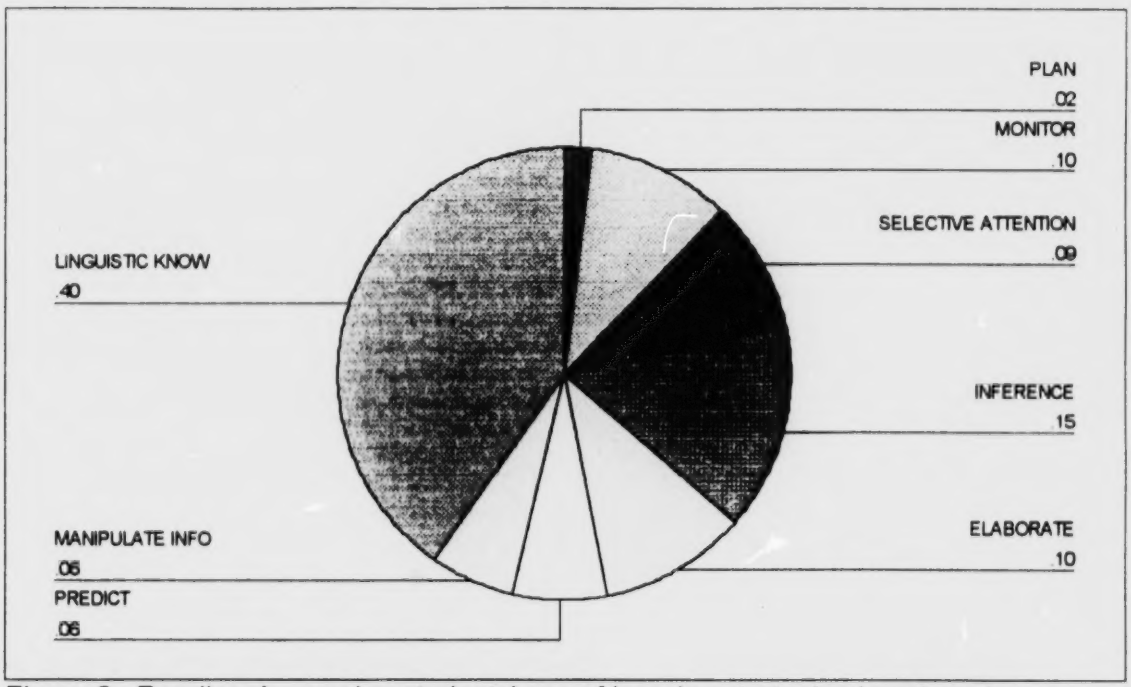


Figure 2. Reading: Immersion students' use of learning strategies in categories expressed as proportion of total learning strategy use.

By far the category with the largest proportion of strategies is Using Linguistic Knowledge which produced a mean proportion of total strategy use of .40. Using Linguistic Knowledge involves readers using their specific knowledge about the second language (L2) such as phoneme-grapheme correspondences and grammar rules to help them extract meaning from the text.

The next largest strategy category was Inferencing with a mean proportion of .15. Inferencing strategies involve using various kinds of background knowledge to make guesses about the meaning of the text. Monitoring strategies accounted for .10 of total strategy use. Monitoring strategies involve the checking of one's own performance on the reading task and understanding of the text. Elaboration strategies also accounted for .10 of the total strategy use in Reading. Elaboration strategies, like Inferencing and Prediction strategies, involve making connections between background knowledge and the text to process the text. Selective Attention accounted for the next largest mean proportion of strategy use in Reading, .09. These strategies involve focusing attention on particular aspects of the task to assist in processing. The students used Prediction as .06 of their total strategy use. Prediction strategies involve making guesses about what will be read on the basis of what has been read and/or background knowledge. Manipulating Information strategies, which involve the transformation of text, either through retelling, summarizing, or translating, in order to process the meaning, accounted for only a .06 proportion of total strategy use. Planning strategies, which involve previewing text and setting conditions to maximize processing, were used the least of all in Reading, and contributed only .02 to total strategy use.

A graphic representation of the mean proportion of categories of strategies used on the Writing Task is displayed in Figure 3.

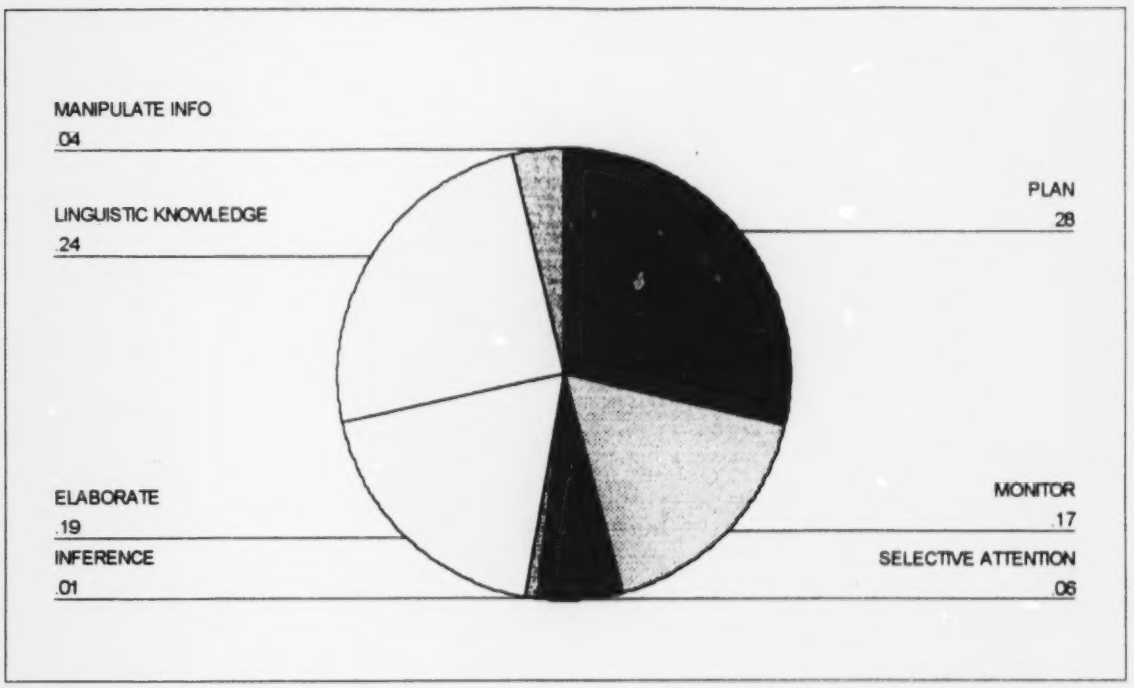


Figure 3: Writing: Immersion students' use of learning strategies in categories expressed as proportion of total learning strategy use.

While Planning constituted the smallest proportion of total strategies on the Reading Task, it constituted the largest proportion of total strategies on the Reading Task, accounting for .28 of total strategy use. Using Linguistic Knowledge strategies, .24, constituted the next largest mean proportion of total strategy use. Elaboration strategies made up a mean proportion of .19, and Monitoring strategies represented a mean proportion of .17. There was only a .04 mean proportion of Manipulating Information strategies, and a .01 proportion

of Inferencing strategies. There were no instances of Prediction on the Writing task and hence this category is not included on the chart.

Clearly, the mean proportions of total strategy use that can be accounted for by different categories was different on the Reading and Writing Tasks. This was not a surprise, because it is known that different tasks require different strategies. However, it is of interest to compare the relative size of the proportions of different categories across the tasks.

Paired t-tests, (alpha = .01) were used to compare the mean proportion scores of strategy use in each of the eight strategy categories across the two tasks, Reading and Writing. The comparison of scores in the strategy category Planning indicated that subjects displayed a significantly larger mean proportion of Planning strategies when writing , .28, than when reading, .02, $t(71)=-9.36$, $p < .000$. Similarly the scores in the metacognitive strategy category Monitoring also had a significantly larger proportion of strategies on the writing task , .17, than in the reading task, .10, $t(71) = 2.79$, $p < .01$. The mean proportion scores on the strategy category of Selective Attention, however, did not produce any significant difference between reading , .09, and writing, .06.

Inferencing, Elaboration, and Prediction are all characterized by the use of background knowledge. The comparison of scores in the category of Inferencing indicated that subjects used a greater proportion of Inferencing strategies when reading, .15, than when Writing, .01, $t(71) = 8.12$, $p < .000$. The total number of occurrences of Inferencing in Writing was only four compared to 143 observations in Reading. Prediction was not used at all in Writing, but

accounted for .06 of total strategies in Reading. The mean proportion of Elaboration strategies used in Writing, .19, was significantly greater than the mean proportion used on the Reading task, .11, $t(71) = -2.94$, $p < .01$.

The strategies that constitute the category of Using Linguistic Knowledge represented a large proportion of total strategy use in both Reading, .40, and in Writing, .24. However, the mean proportion in Reading was significantly larger, $t(71) = 3.97$, $p < .000$. The strategies category Manipulating Information which includes Retelling, Translating, and Summarizing produced a mean proportion score of .06 for Reading and .04 for Writing. These scores were not significantly different.

In sum, it was found that on the Writing Task the mean proportions of total strategies of Planning, Monitoring, and Elaboration were significantly greater than the mean proportions for Reading. The mean proportion scores of Inferencing, Prediction, and Using Linguistic Knowledge were greater for Reading than for Writing. There was no significant difference in mean proportions of scores between Reading and Writing in either Selective Attention strategies or in Manipulating Information strategies.

Reading

The strategies that we observed the children use during the Reading Task will be described in terms of the strategy categories outlined in the Hierarchical Classification Scheme described above. Total numbers of

observations for all specific behaviors within each strategy category, category totals, and mean proportions are also listed in Appendix F.

Mean scores in each strategy category will be described by the specific behaviors observed in that category. When possible, mean proportion scores will be analyzed by Language, Rating, and Grade to determine if the description is appropriate for the whole group. Any significant effects of these factors will be described and analyzed.

Planning

Planning strategies in Reading involve previewing the organizing concept or principle of a text and/or proposing strategies for an anticipated reading task. Out of a total of 120 instances of Planning strategies that were observed across the 72 students who participated in the experiment only 13 of them occurred during Reading, the mean proportion of frequency of occurrence of Planning strategies across the subjects was .02 .Of these 13 strategies, eight involved Previewing, looking over the text briefly to search for large meaning or overall text structure. The other five Planning strategies involved self-management, or deciding how one will accomplish a task and arranging conditions to do so. An example of self-management is consciously choosing to read a passage aloud as an aid to comprehension. Since the number of Planning strategies was very small, further analysis would not be meaningful.

Monitoring

There were 103 observations of Monitoring strategies during Reading, and they constituted a mean proportion of .10 of the students' total strategy

use. For total numbers of specific strategies observed see Appendix F.. Figure 4 displays the list of specific Monitoring strategies included in the Hierarchical Classification Scheme. The instances observed are expressed as average mean proportions of total strategy use by the students. The value of the average mean proportion of each specific Monitoring strategy is given in Figure 4.

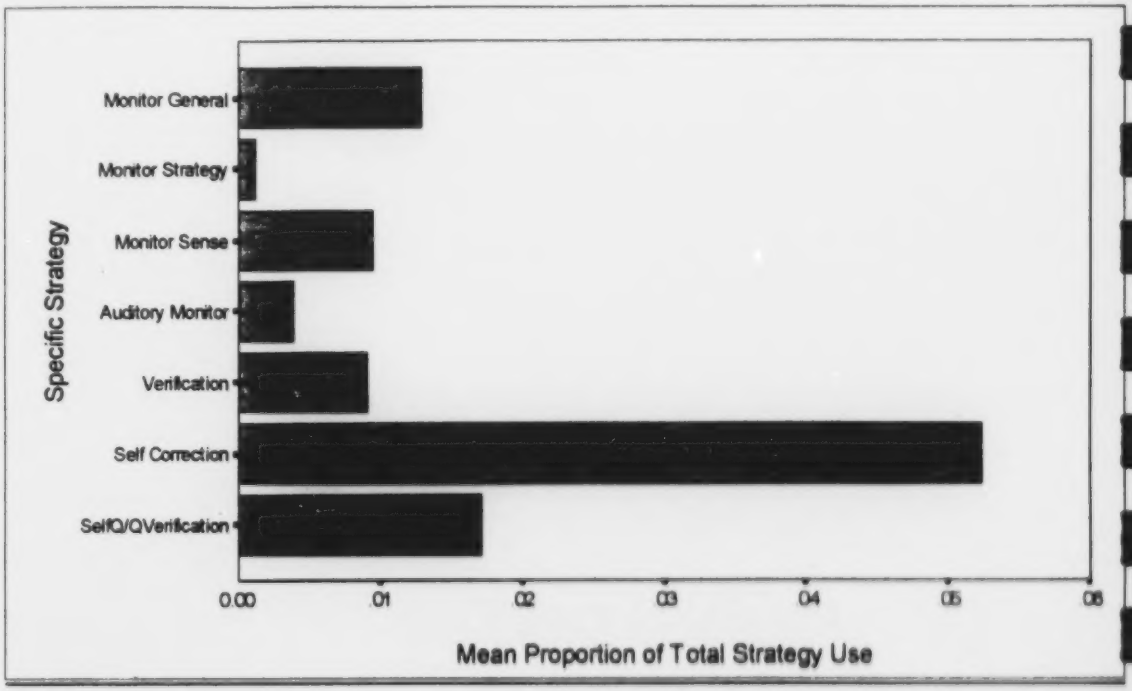


Figure 4. Reading: Mean proportions of specific Monitoring strategies of total learning strategy use: Monitor (General), Monitor (Sense), Monitor (Strategy), Auditory Monitor, Verification, Self-Correction, Self-Questioning / Questioning for Verification.

By far the most frequently used specific Monitoring strategy was Self-Correction which includes behaviors where the students corrected their own errors spontaneously (N = 48, mean proportion = .05). The next most frequently used Monitoring strategy was Self-Questioning/ Questioning for Verification (N =

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22, mean proportion = .02): the student either asks him/herself or the Researcher about the correctness of some aspect of processing the text: "Did I say that right?" "Is that the same boy?." In a Think Aloud interview it is not always clear whether a S's question is directed to the Researcher or if it is a self-directed question. Another Monitoring strategy the children used was Monitoring Sense (N =14, mean proportion = .01). The students either comment that the sense of what they read was unclear, "That doesn't make sense." Or they may comment, "Oh, yes, I get it, that makes sense." Verification is an important strategy that is characteristic of more sophisticated readers in High School students . In this immersion group we observed only nine instances of Verification strategies (mean proportion = .01). Auditory Monitoring includes behaviors where the student consciously listens to the sounds or words of a text in order to make decisions about the text, "That sounds right." There were only 3 instances of Auditory Monitoring in Reading. Monitoring (Strategy), which was observed only twice in this research, is a specific strategy that is characteristic of high-rated older students. This strategy includes behaviors that reflect the student's Monitoring of his/her current strategy use, "This might not be a good way to do it." There were five instances of strategy use that were categorized as General Monitoring. Either the coders were unable to identify the specific behaviors, or they did not agree on the specific strategy, but did agree that the behaviors clearly represented Monitoring strategies.

To find out whether the above description of Monitoring strategy use in Reading was valid for all the groups of students in our sample regardless of

grade, teacher rating, or language of study, the mean proportions of Monitoring strategies were subjected to an analysis of variance (ANOVA) with Grade (Grades 1&2, Grades 3&4), Teacher Rating (High, Low), and Language of study (French, Spanish, Japanese) as independent variables.

The results of the ANOVA were that no interactions were significant, and the only significant main effect was that of Grade, F (1, 71) = 4.53, p<.05. Students in Grades 3&4 used a significantly larger proportion of Monitoring strategies (M = .13) than students in Grades 1&2 (M = .07).

Since Self-correction was a specific strategy that contributed almost .50 of the subjects' total Monitoring scores, a post hoc specific comparison was carried out to determine whether there was a significant difference in mean proportion scores of Self-correction across grades. The result was that there was a significant difference t (70) = 2.27, p = .01, between the mean proportion of Self-correction scores for students in Grades 1&2, .03, and the mean proportion for students in Grades 3&4, .07.

In summary, the subjects in this experiment used variety of Monitoring strategies, but Self-correction was the most frequently used specific strategy. Students in Grades 3 & 4 used a higher proportion of Monitoring strategies than the younger students. This is partially accounted for by the fact Self-correction constituted a larger proportion of total strategy use for older than for younger students. No differences were found in frequency of strategy use between high- and low-rated students or between students of different languages.

Selective Attention

Selective Attention strategies are strategies in which the students consciously focus attention on some specific aspect of the text, or its context, in order to process the text. There were 83 observations of Selective Attention strategies during Reading. The average mean proportion of Selective Attention of total Reading strategies was .09. Figure 5 displays the list of specific Selective Attention strategies that were included in the Hierarchical Classification Scheme and the average mean proportion of total strategy use calculated for each strategy.

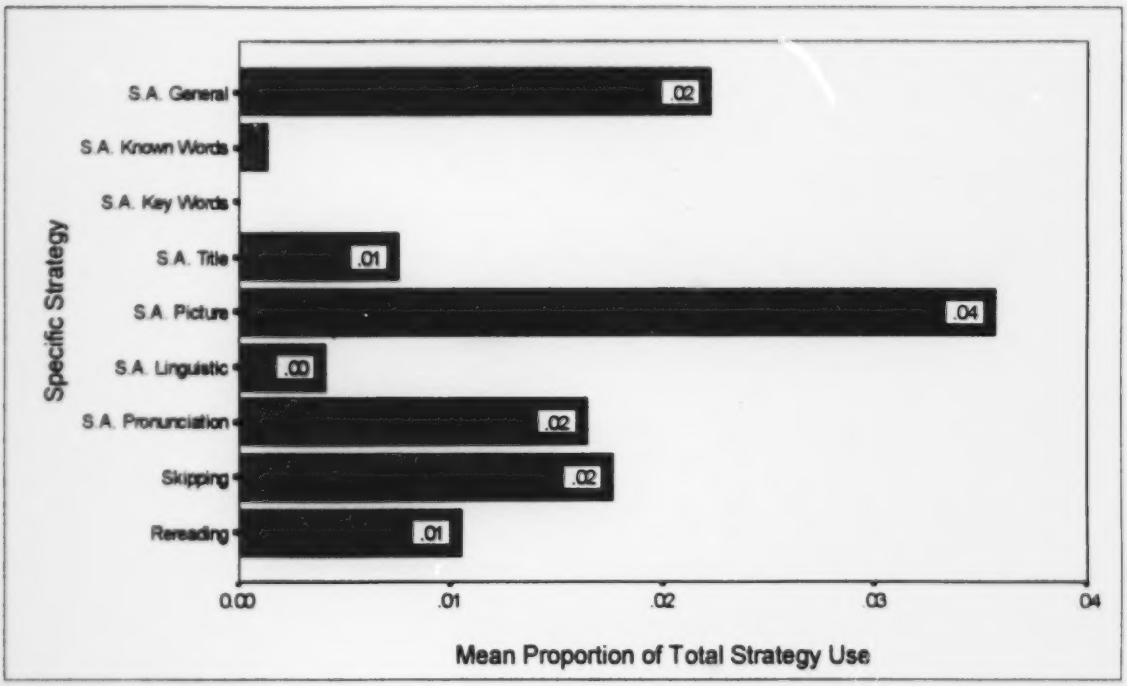

Figure 5. Reading: Mean proportions of specific Selective Attention strategies of total learning strategy use: Selective Attention (General), S.A. (Known Words), S.A. (Key Words), S.A. (Title), S.A. (Picture), S.A. (Linguistic Features), S.A. Pronunciation, Skipping, Rereading.

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The most frequently used Selective Attention strategy was Selective Attention (Picture), (N = 33, mean proportion = .04). The next most frequently used specific Selective Attention strategy was Rereading (N = 14, mean proportion = .01). It is notable that although Rereading ranked second in raw frequency of strategy use, it ranked behind Skipping, General Selective Attention, and Selective Attention (Pronunciation) in mean proportion of total strategies. Rereading included the number of instances where a student consciously reread a sentence or whole text to extract meaning (N = 13) and instances where a student consciously looked back at previously read text for information that would help with a current problem (N = 1). Selective Attention (Pronunciation) was observed in 12 instances (mean proportion = .02); Selective Attention (Title) was observed in eight instances (mean proportion = .01); and Selective Attention (Linguistic Features), such as attention to verbs, endings, or grammatical correctness, was observed in five instances. Five behaviors observed were categorized as General Selective Attention.

The generality of the mean proportion of Selective Attention scores was tested using an ANOVA by Grade, Rating, and Language. The analysis yielded no interactions and no main effects.

In summary, the students in the study used Selective Attention strategies when Reading, particularly Selective Attention (Picture). There were no differences in the distribution of these scores by Grade or Teacher Rating or by Language of Study.

Inferencing

Inferencing strategies are cognitive strategies. Like Prediction and Elaboration, they involve making connections with background knowledge to construct meaning from text. Inferencing specifically refers to putting together elements in the text that allow the reader to guess some aspect of the meaning of the text, such as the meaning of an unknown word or a character's motivation. In the Reading task 143 instances of Inferencing strategies were observed. The average mean proportion of Inferencing strategy use of total strategy use was .15.

Figure 6 displays the specific Inferencing strategies which were included in the Hierarchical Classification Scheme and the average mean proportion of strategy use observed for each strategy.

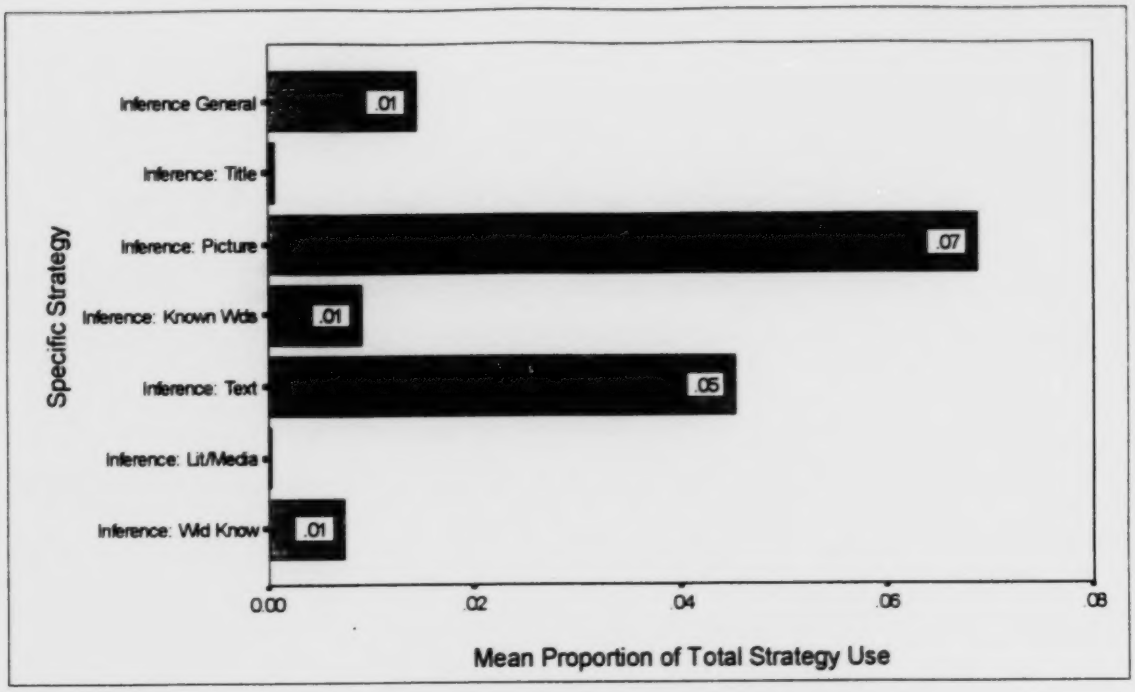

Figure 6. Reading: Mean proportions of specific Inferencing strategies of total learning strategy use. Inferencing (General), Inferencing (Title), Inferencing (Picture), Inferencing (Known Words), Inferencing (Text), Inferencing (Literature/Media), Inferencing (World Knowledge).

The most frequently observed specific Inferencing strategy was Inferencing (Picture), (N = 65, mean proportion = .07). This strategy involves the student using a picture to make a guess about some aspect of the meaning of the text. For example, it could be a guess about the meaning of a word or about the content of the text: "(Student is looking at a picture)....I think it is a story about a cat that is lost and the child..." (Interviewer: "Why do you think the cat is lost?") "Because here there is a poster on a tree with its picture...." The next most frequent Inferencing strategy was Inferencing (Text), (N = 39, mean proportion = .05). In this case the student uses text he/she has already read to

make inferences about other aspects of the text that are not stated, or about unknown words. "The parents don't like the dog....because in the end it says 'I, myself, don't like it.' So it's the parents who don't like dogs." There were 11 instances of Inferencing from Known Words (mean proportion = .01), where the student focuses on making an Inference on the basis of specific known words in the text. In eight instances students used Inferencing World Knowledge (mean proportion = .01), they made inferences about the text based on their general knowledge of the world, "I know that's about a cat because that's what cats do." In only one observed instance did a student make an inference about the text based on the title. There were 18 behaviors that were categorized as Inferencing (General).

The average mean proportion of Inferencing scores was analyzed using an ANOVA by Grade, Rating, and Language to test whether there were any significant differences between these groups. The results of the ANOVA indicated that there was a significant three-way interaction between Grade, Language, and Rating, $F(2, 71) = 5.77$, $p < .01$. There were no other significant interactions. The main effect of Grade was significant, $F(1, 71) = 6.15$, $p < .05$, as was the main effect of Language, $F(2, 71) = 3.14$, $p < .05$.

Figures 7a and 7b represent the relationship between mean proportions of Inferencing scores for high- and low-rated students in each Language group.

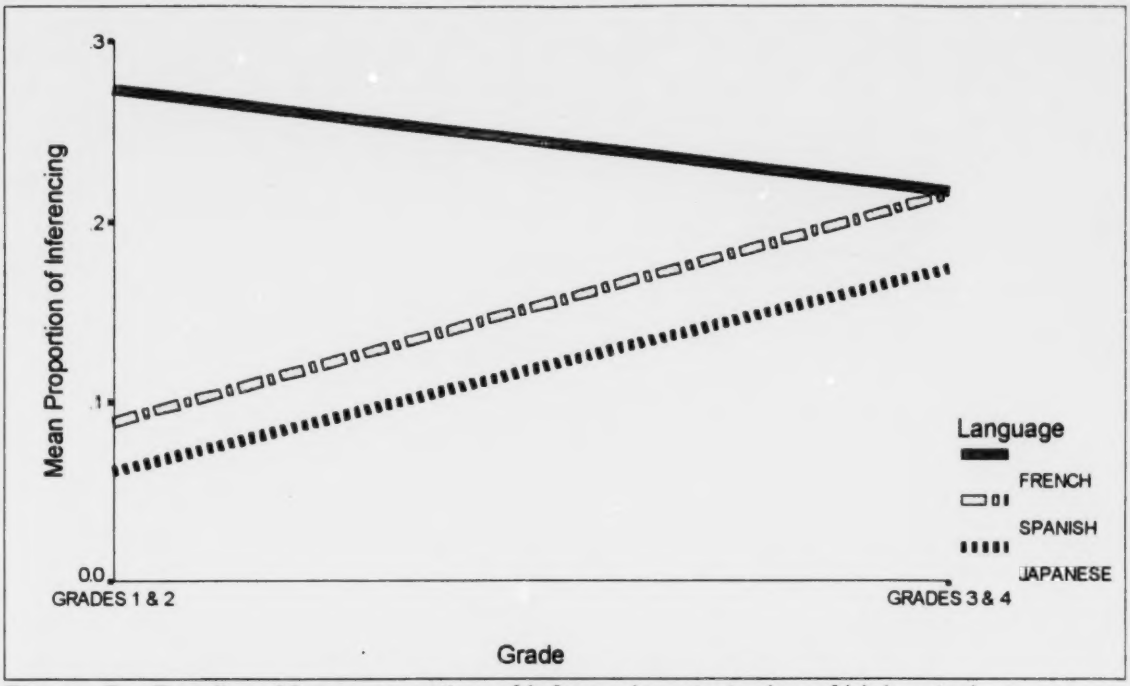

Figure 7a: Reading: Mean proportion of Inferencing strategies of high-rated students of French, Spanish, and Japanese in Grades 1&2 and 3&4.

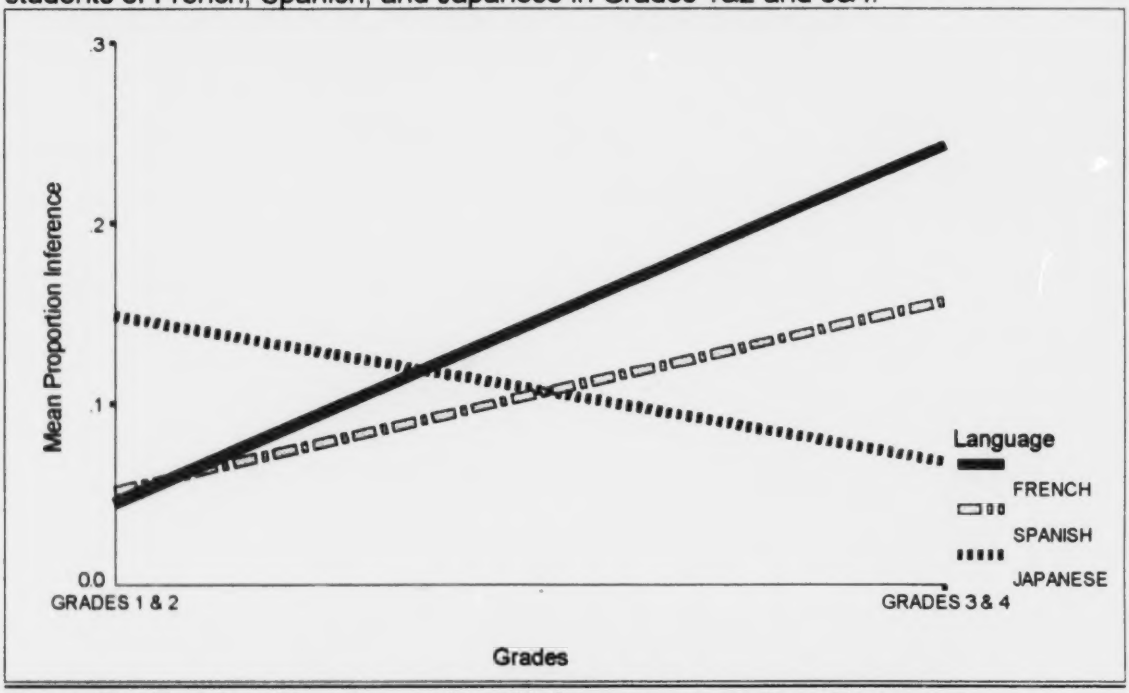

Figure 7b. Reading: Mean proportion of Inferencing strategies of low-rated students of French, Spanish, and Japanese in Grades 1&2 and 3&4.

Figures 8a and 8b represent the mean proportion scores for Inferencing of students in Grades 1&2 and students in Grades 3&4 in each language group.

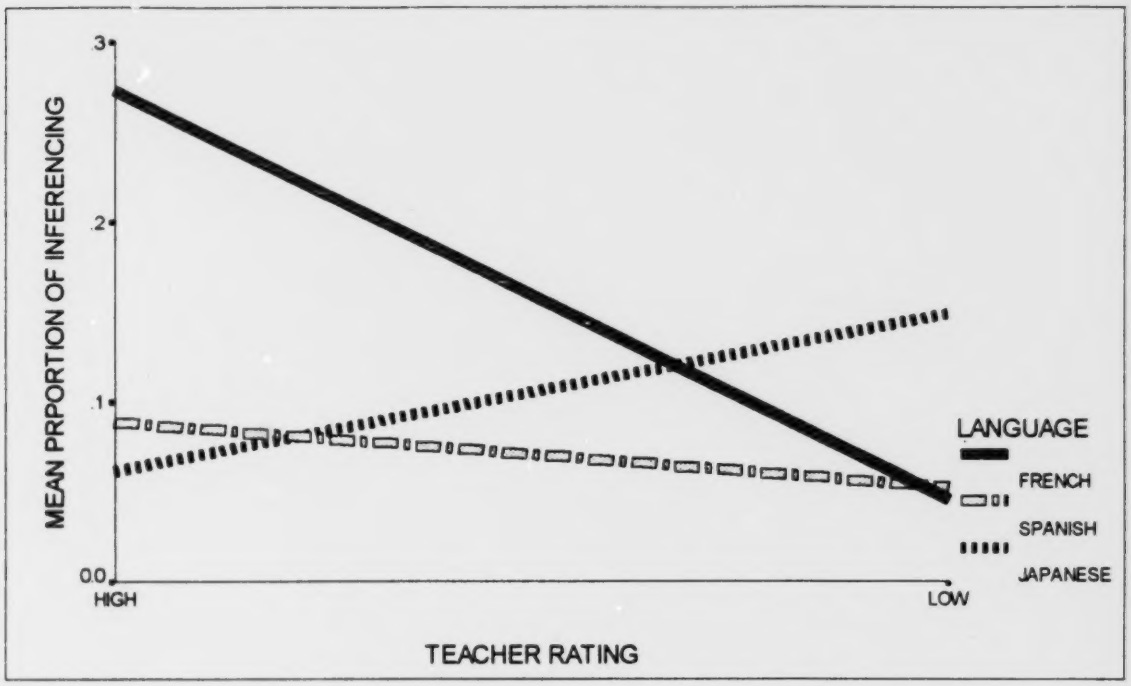

Figure 8a. Reading: Grades 1&2 students' mean proportion of Inferencing strategies by Teacher Rating (high and low) for students of French, Spanish, and Japanese.

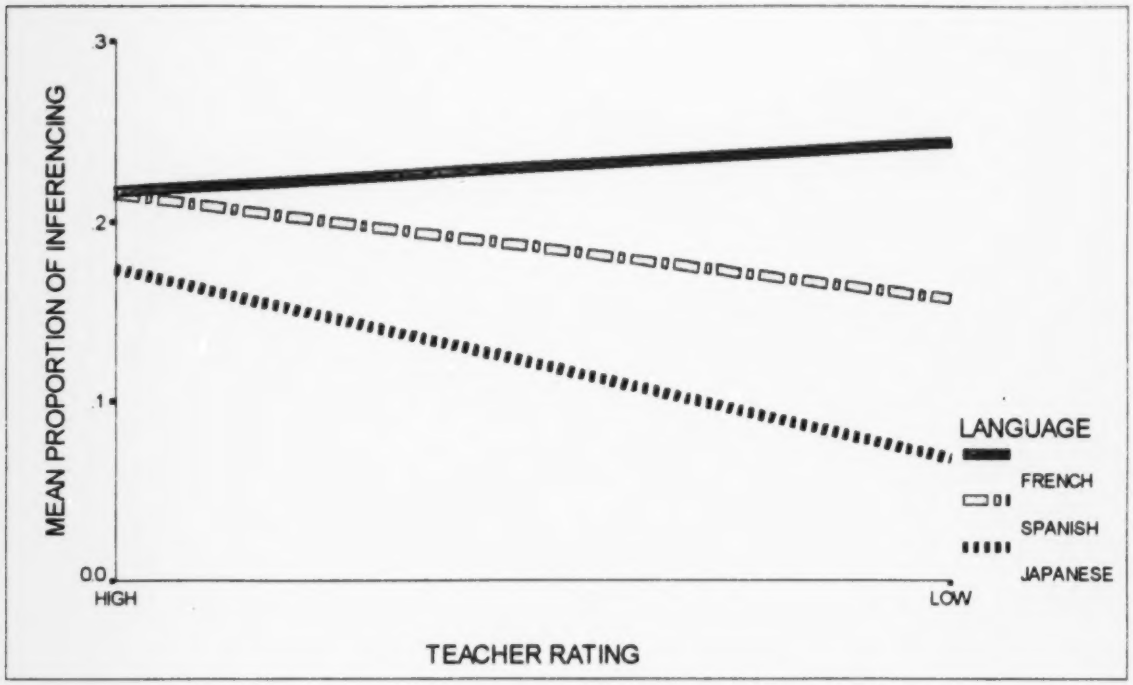

Figure 8b. Reading: Grades 3&4 students' mean proportion of Inferencing strategies by Teacher Rating (high and low) for students of French, Spanish, and Japanese.

An examination of Figures 7a and 7b indicates that the patterns of mean proportion of Inferencing strategy use are different for the high- and low-rated groups of students. Figure 7a displays the mean proportions of Inferencing strategy use of high-rated students for each language group in Grades 1&2 and Grades 3&4. High-rated students of French in Grades 1 & 2 produced a significantly larger mean proportion of Inferencing strategies ,.27 than high-rated students of Spanish ,.09, and Japanese, .06, in the same grades, (Neuman-Keuls diff. crit. = .08, $p < .05$). By Grades 3 & 4 however, the mean proportion of Inferencing strategies of students of French, .22, Spanish, .22, and

Japanese, .17 converge. There were no significant differences (alpha = .01) in mean proportion of Inferencing scores between Grades 1&2 and Grades 3&4 for high-rated students in any of the language groups.

Figure 7b demonstrates that the pattern of mean proportion of Inferencing strategies of total strategy use for low-rated students in the three language groups over the two Grade levels. Differences in mean proportions of Inferencing strategy scores between languages were not significant in Grades 1&2, but in Grades 3&4 the mean proportion of Inferencing strategies of low-rated students of French, .24, was significantly larger than the that of low-rated students of Japanese, .07. For low-rated students of French there was a significant increase in mean proportion of Inferencing strategies from Grades 1&2 , .05 to Grades 3&4, .24, t (10) = 5.46, p =.000; a similar increase occurred in score for low-rated students of Spanish from Grades 1&2 , .09 to Grades 3&4, .22, t (10) = -2.53, p <.01. There was no significant difference for low-rated students of Japanese across grades.

Figure 8a displays the mean proportions of total strategy use for Inferencing strategies of students in Grades 1&2 by Rating. Again it can be seen that the high-rated students of French used a larger mean proportion of Inferencing strategies than the other students, but that this difference did not occur between the low-rated students in the different language groups. There is a significant difference in the mean proportion of Inferencing strategy use between high- and low-rated students of French in Grades 1&2, high-rated, .27,

low-rated ,.05, t (10)= 3.04, p < .01, while there were no similar significant differences for students of Spanish and Japanese.

Figure 8b displays the mean proportions of total strategy use for Inferencing strategies of students in Grades 3 & 4. There were no significant differences in the mean proportions of high-rated students in the three language groups, but, as described in the discussion of Figure 7b, among the low-rated students the Grade 3&4 students of French used a significantly larger proportion of Inferencing strategies than the similar group of students of Japanese. There were no significant differences in the mean proportions of Inferencing strategies between high- and low-rated students for any language group in Grades 3&4.

The main effect of Grade on mean proportion of Inferencing strategy scores indicated that the students in Grades 3&4 used a larger proportion of Inferencing strategies, .18, than students in Grades 1&2, .11. However, this difference must be considered in the light of the three-way interaction described above.

In order to find the locus of the main effect of Language, a one-way ANOVA was used to test the differences between mean proportions for French, .19, Spanish, .13, and Japanese, .11. There were no significant differences between means as determined by the Neuman-Keuls (diff. crit. = .09, p < .05.)

Inferencing (Picture) and Inferencing (Text) both contributed a large proportion of the total Inferencing strategies scores. Both specific strategies were subjected to a post hoc full ANOVA to test whether the effects found in the

analysis of the full strategy category held for the specific strategies (alpha = .01). In the results of the analysis of Inferencing (Picture) mean proportions yielded no significant interactions or main effects. The results of the analysis of Inferencing Text produced no significant interactions, but the main effects of Grade, F (1, 71) = 17.46, p = .000, and Language, F (2, 71) = 6.94, p <.01, were significant.

The main effect of Grade on Inferencing (Text) scores indicates that the mean proportion of Inferencing (Text) strategies of students in Grades 3&4 ,.08, was significantly larger than that of students in Grades 1&2, .01. Specific comparisons were used to determine the locus of the significant mean effect of Language on mean proportion Inferencing (Text) scores. The comparisons indicated that the mean proportion of Inferencing (Text) scores of students of French .08, was significantly larger than the mean proportions of students of Spanish, .04, and Japanese, .01.

In summary, the elementary students who participated in this experiment used Inferencing strategies when Reading, especially inferences from pictures and inferences from text. high-rated students of French in Grades 1 & 2 produced a significantly larger proportion of Inferencing strategies than anybody else in Grades 1&2, including a higher proportion than low-rated students of French. However, in Grades 3&4 high-rated students in the three languages all produced about the same proportion of Inferencing strategies, and there were no significant differences between proportion of strategies between high- and low-rated students in any language. High rated students of Japanese were the only

high-rated students to use a larger proportion of Inferencing strategies in Grades 3&4, than in Grades 1&2 . (The scores for students of Spanish produced the same trend, but the difference was not significant.) However, low-rated students of French and Spanish used a significantly higher proportion of Inferencing strategies in Grades 3&4 than in Grades 1 & 2 while the differences between scores for high-rated students were not significant across the grades.

Significant main effects for Grade and Language were also found, but they must be interpreted in the light of the three-way interaction. Inferencing (Picture) and Inferencing (Text) were also analyzed by Grade, Language, and Rating. There were no significant effects for Inferencing (Picture), but Inferencing (Text) proved to constitute a higher proportion of total strategy use in older grades and a higher proportion for students of French than for students of Japanese or Spanish.

Prediction

During the Reading task, 56 instances of Prediction strategies were observed, which constituted .06 of the students' total strategy use. Like Inferencing strategies, Prediction strategies involve making connections between background knowledge and text to aid processing the text. Specifically, Prediction strategies involve making guesses about what is going to happen later in the text or what the text will be about. Prediction and Inferencing strategies sometimes overlap to a degree where it is not possible to tease them apart. The specific Prediction strategies and the average mean proportion of total strategies for each specific strategy are displayed in Figure 9.

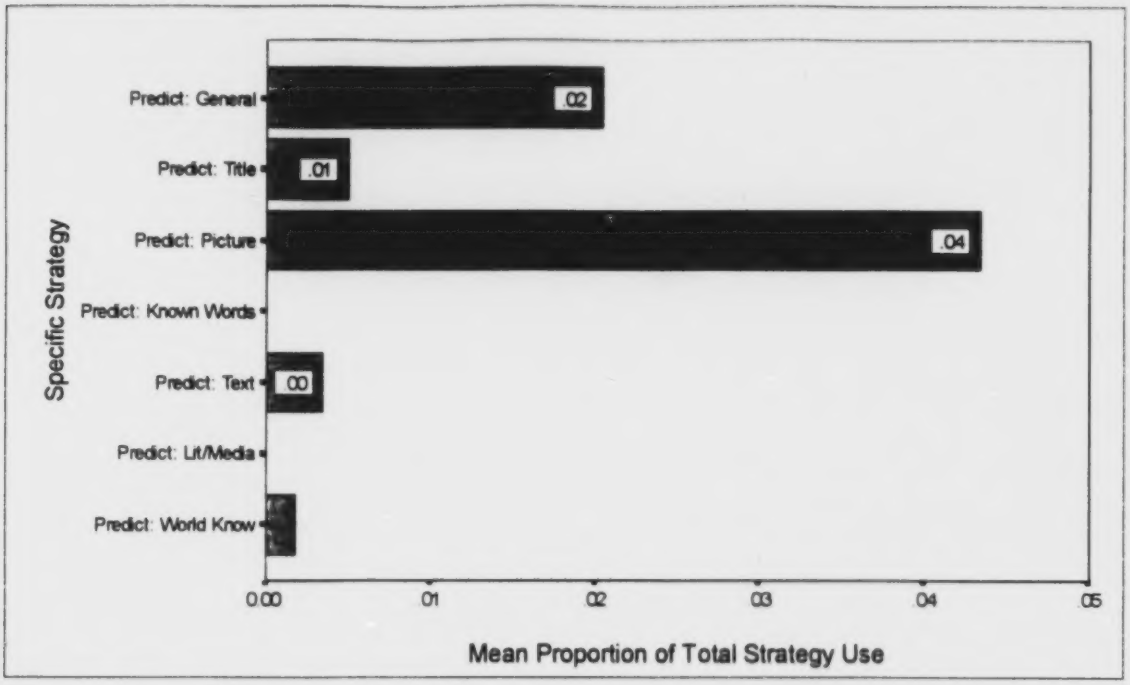

Figure 9. Reading: Mean proportions of specific Prediction strategies: Prediction (General), Prediction (Title), Prediction (Picture), Prediction (Known Words), Prediction (Text), Prediction (Literature/Media), Prediction (World Knowledge).

Prediction (Picture) was the most frequently observed Prediction strategy (N = 40) and produced the largest average mean proportion of the Prediction strategies, .04. This strategy involves making a Prediction about the text on the basis of a picture, "So I look at the picture and then I think that in the story that there will be a wolf that is like...after a person he wants to eat." The other 16 instances of Prediction strategies are spread out across Prediction (Title), (N = 4) where the student makes a Prediction about the text on the basis of the title, Prediction (Text), (N = 3) in which the student makes a Prediction on the basis of text already read and comprehended, and Prediction (World Knowledge), (N = 3)

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in which the student makes a Prediction about the text on the basis of his/her world knowledge. There were no instances of students using either Prediction (Known Words), in which they specifically use words they know to make Predictions, or Prediction (Literature/Media), in which the students use general knowledge from literature or media such as television or movies to make Predictions about the text. There were 6 instances of behaviors which were recorded as Prediction (General) because the coders were unable to identify the specific strategy.

The mean proportions of total strategies of the overall Prediction strategy category scores were subjected to an analysis of variance by Grade, Teacher Rating, and Language of the Program. The results of the analysis were that no interactions were significant, but the main effects of Grade, F (1,71) = 13.32, p <.01, and Language, F (2, 71) = 3.95, p <.05, were significant.

The main effect of Grade indicated that the students in Grades 3 & 4 produced a significantly larger mean proportion score, .10, than the students in Grades 1 & 2 , .03.

The mean proportion of Prediction strategies used by students of French was .09; the mean proportion for students of Spanish was .07; and the mean proportion for students of Japanese was .03. Specific comparisons were carried out to test the significance of the differences between scores of the different language groups. The only significant difference occurred between mean proportion scores of French and Japanese (Neuman-Keuls diff crit. = .06).

Prediction (Picture) was by far the most frequently used specific Prediction strategy. A post hoc test was conducted to determine whether use of Prediction (Picture) varied by Grade as the overall mean proportion for Prediction strategy use did. The results of the post hoc test indicated that students in Grades 3&4 used a significantly larger proportion of predictions from pictures (mean proportion = .07) than students in Grades 1&2 (mean proportion = .02), t (70) = -3.19, p <.01.

Another post hoc test was carried out on Prediction (Picture) to determine whether the effect of Language of Program was also significant for the specific strategy. Language of did not produce a significant effect on Prediction (Picture), p > .05.

In summary, the students in this study did use Prediction strategies and the most frequently used Prediction strategy was Prediction (Picture) in which they made Predictions about the text on the basis of the pictures which were presented with the text. Interestingly, the students in Grades 3&4 made more use of Prediction strategies than younger students, and specifically they made more use of the Prediction (Picture) strategy as a proportion of their total strategy use. Students of Japanese used less Prediction strategies than students of French and Spanish, however only the difference between French and Japanese programs was significant. This difference between strategy use and Language of Program did not hold up for the specific strategy of Prediction (Picture). No differences in terms of frequency of Prediction strategy use were

found for students with High and Low teacher ratings or for students cf different languages.

Elaboration

Elaboration strategies, like Inferencing and Prediction, are based on the reader making connections between his/her background knowledge and the text to help process the text. In Elaboration strategies the reader uses this background knowledge to construct meaning by making or remembering associations or connections between what is already known and new information. There were 92 occurrences of Elaboration strategies observed in the Reading task. Elaboration strategies constituted a mean proportion of .10 of the students' total strategy use in Reading.

Figure 10 displays the list of the specific Elaboration strategies along with the average mean proportion of total scores for each specific strategy.

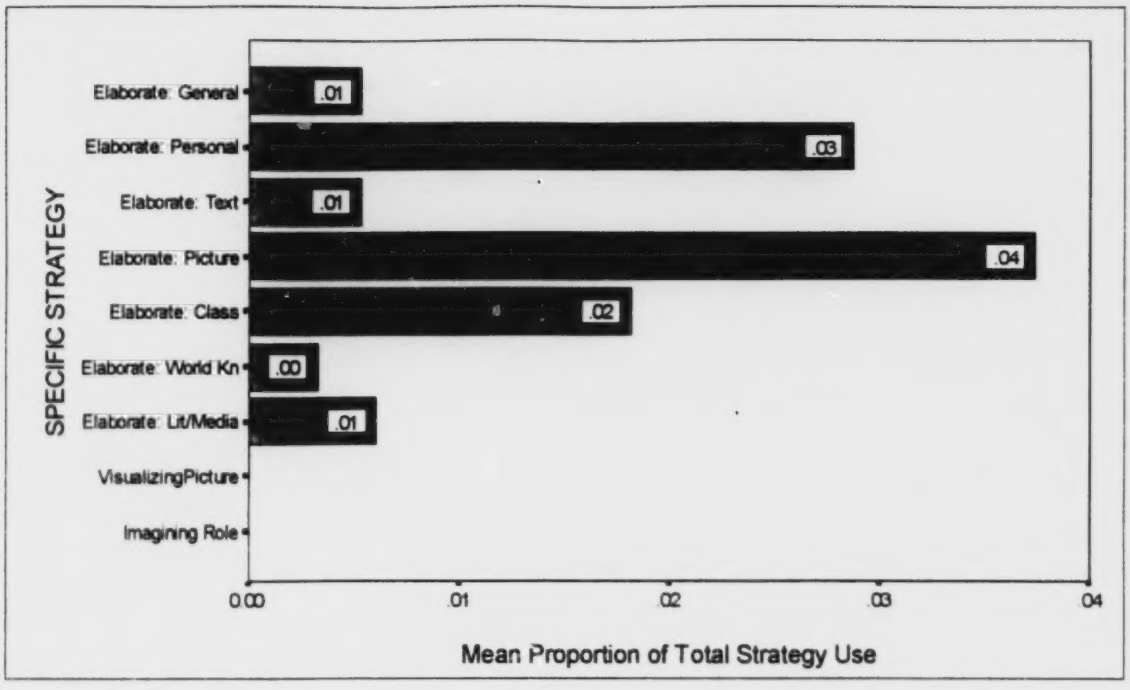

Figure 10. Reading: Mean proportions of specific Elaboration strategies: Elaboration (General), Elaboration (Personal), Elaboration (Text), Elaboration (Picture), Elaboration (Class), Elaboration (World Knowledge), Elaboration (Literature / Media), Visualizing Pictures, Imagining Roles.

The most frequently observed Elaboration strategy observed was Elaboration (Picture) (N = 38, mean proportion = .04): The reader looks at a picture which accompanies the text and makes connections between that picture and his/her background knowledge to construct meaning, "(looking at picture)....a king I think is in his bed...and he travels the world because that is the world. ..and that is like China there and that is...like it's it's an airplane...." The next most frequently observed Elaboration strategy was Elaboration (Personal), (N = 23, mean proportion = .03), in which the reader's personal experience is associated with the text. The association can be a conscious connection between personal experiences and the text, "She wants to play with

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the cat just in the house, but I know that cats don't play with you a lot.". The association can also be a personal emotional reaction to the text and/or a personal judgment about the text, "This is funny." "Yuck,..... disgusting." There were 13 observations of Elaboration (Class) (mean proportion = .02), where the students associated something in the text to something that they do or did in school "I know this word...it is one of our 'Words of the Week.'". The rest of the Elaboration strategies were spread out between Elaboration (Literature/Media), (N = 7) in which the students made associations between the text and something else they had read or seen in the media; Elaboration (Text), (N = 4) in which the students made associations between different parts of the text, and Elaboration (World Knowledge), (N = 4), in which the students made associations between the text and their general world knowledge. There were no instances of Visualizing Pictures, in which a reader consciously makes a visual mental image of the text or of Imagining Role, in which the reader consciously imagines himself/herself in the story. In three cases behaviors were coded as Elaboration (General).

The mean proportions of total strategy use for the overall Elaboration strategies scores of the students were subjected to an analysis of variance with Grade, Language, and Rating as the independent variables. The results of the analysis were that no interactions were significant, and the only significant main effect was that of Grade, F (1, 71) = 8.19, p <.01.

The main effect of Grade indicates that the students in Grades 1&2 used a significantly larger proportion of Elaboration strategies of their total strategy use, .14, than students in Grades 3&4 whose average mean proportion was .07.

Since Elaboration (Picture) was the most frequently used specific Elaboration strategy and Elaboration (Personal) was also frequently observed, both specific strategies were subjected to post hoc t-tests to determine if the observed main effect of Grade on the overall Elaboration strategies score held for these specific strategies. The students in Grades 1 & 2 used Elaboration (Picture) as .06 of their total strategy use, which was significantly larger than the mean proportion of .02 for the students in Grades 3 & 4, $t(70) = 2.77$, $p < .01$. There was, however, no significant difference in the mean proportion score of (Elaboration) Personal between students by Grade, $p > .05$.

In summary, the primary immersion students who participated in this experiment used Elaboration strategies. Their most frequently used elaboration strategy was to make elaborations about the pictures. The next most frequently used strategy was to associate personal experiences or reactions with the text. These Elaboration strategies in general were used as a larger proportion of their total strategies by students in the younger grades than in Grades 3 &4. The specific strategy of making elaborations on the basis of pictures was also used as a larger proportion of total strategies by the younger students. There was no difference between grades in use of personal elaborations. No differences in

frequency of strategy use were found between high- and low-rated students or between students of different languages.

Using Linguistic Knowledge

Using Linguistic Knowledge strategies in Reading involve applying rules or knowledge of grammar to comprehend the text. Figure 11 displays the specific strategies and the mean proportions of total strategy use for each specific strategy in this category.

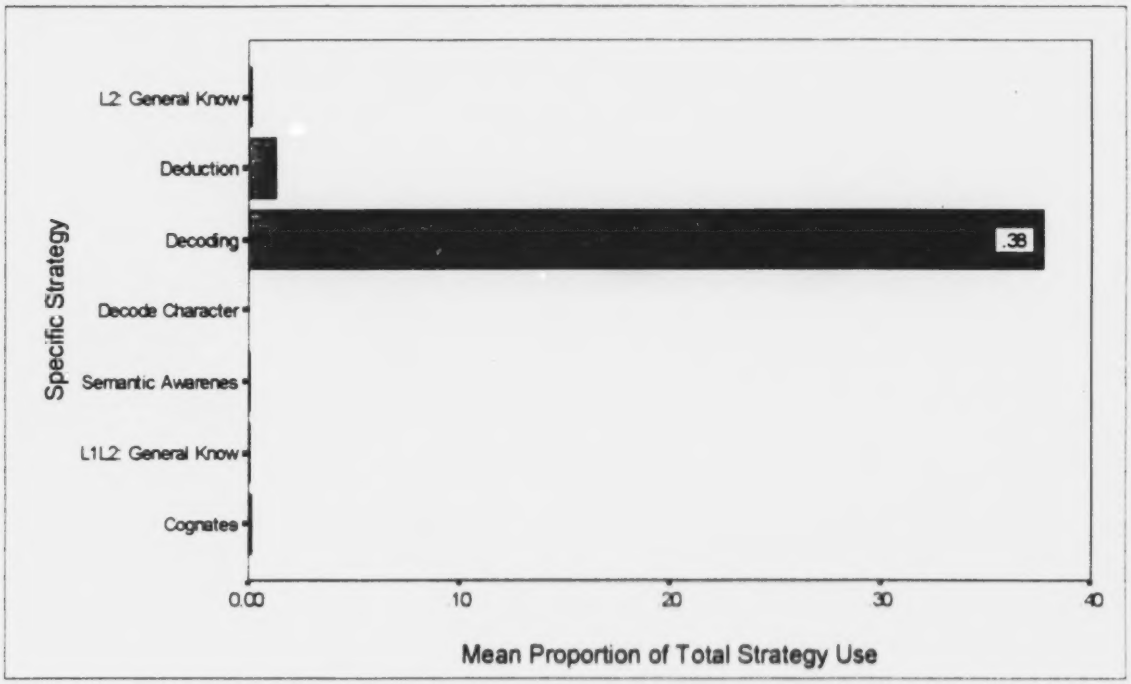

Figure 11. Reading: Mean proportions of specific Linguistic Knowledge strategies: L2 Linguistic Knowledge (General), Deduction, Decoding, Decoding Characters, Semantic Awareness, Linguistic Knowledge of L1 and L2 (General), Cognates.

Using Linguistic Knowledge was the most frequently used strategy category with a total of 440 observed instances which constituted a mean

proportion of total strategies of .40. Decoding produced the highest frequency of any specific strategy in Reading with a total of 421 observed incidences and a mean proportion of total strategy use of .38. Behaviors were counted as Decoding whenever a child was clearly using a code to figure out the meaning and/or sound of word. "..des....pa...pa...per...ta..dor." Each word decoded was counted only once. If a student said he/she was trying to figure out a word by using the sounds or letters this was also counted as an incidence of Decoding, "I'm thinking about how to pronounce the letters ." The rest of the Using Linguistic Knowledge strategy use included only 19 incidences which were distributed between Deduction (N = 13, mean proportion < .01): the reader applies knowledge of regularities in the language to process the text, "I thought that it was the story's beginning, but it wasn't because the first word there was not in a capitalized letter...so I knew that it was not the first paragraph of the page;" Cognates (N = 2), the reader uses a cognate to derive the meaning of an unknown L2 word; Semantic Awareness (N = 1), the reader uses knowledge that words can have alternative meanings; and L1-L2 Knowledge General (N = 1) and L2 Knowledge General (N = 2), both categories that include behavior which applies specific knowledge about either L1 or the relationship between L1 and L2 to comprehend text. The Using Linguistic Knowledge (General) category included two observations. There were three Using Linguistic Knowledge strategies on the Hierarchical Classification Scheme that were not used at all by the students: Substitution, Borrowing, and Mixing. Since these are strategies that

are more appropriate to Writing than to Reading they will not be dealt with further in this discussion.

The mean proportion scores of total strategy use of the overall Using Linguistic Knowledge strategies category were analyzed using analysis of variance by Grade, Language, and Rating. The ANOVA produced a significant interaction between Grade and Language of Program, F (2, 71) = 6.77, p < .01. No other interactions were significant. The main effect of Language was significant, F (2,71) = 11.43, p <.000; as was the main effect of Rating F (1, 71) = 6.89, p <.01.

A graphic representation of the interaction between Grade and Language is displayed in Figure 12.

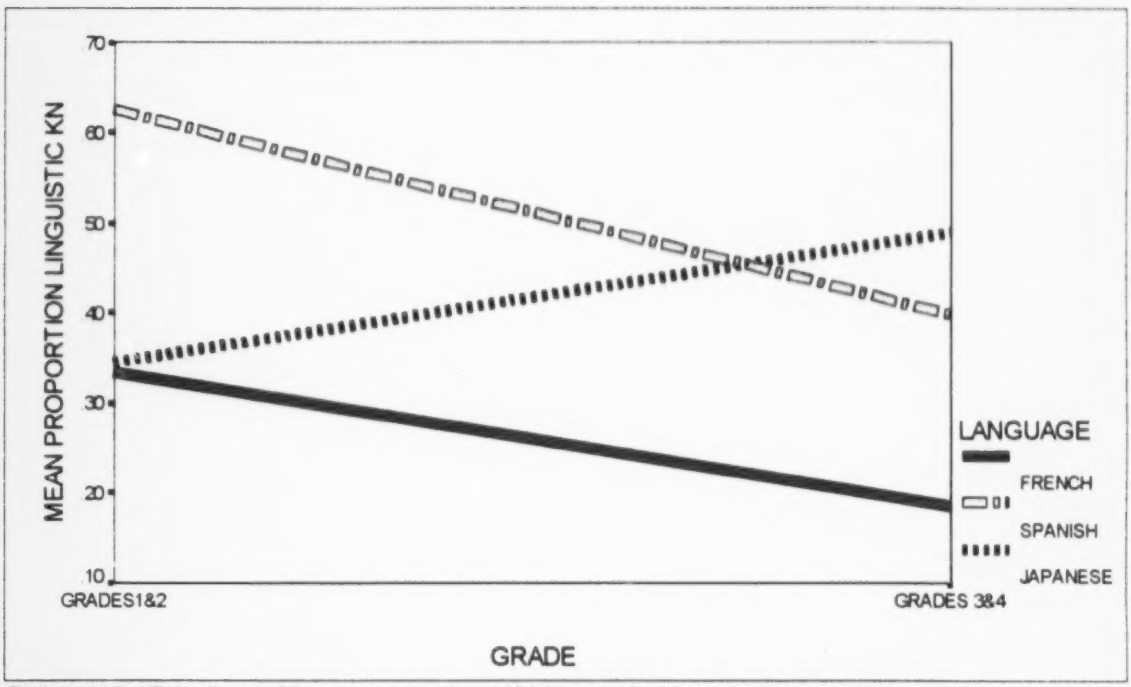

Figure 12. Reading. Mean proportion of Linguistic Knowledge strategies of students of French, Spanish, and Japanese in Grades 1&2 and 3&4.

The graph demonstrates that in Grades 1 & 2, students of Spanish use a higher proportion of Using Linguistic Knowledge Strategies of their total strategies than students of French and Japanese, who use about the same proportion of Linguistic Knowledge strategies. In Grades 3 & 4 students of Spanish still use a greater proportion of Specific Language Knowledge strategies than students of French, but for both these languages the older students use a smaller proportion than the younger students. By contrast, the Japanese students use more Using Linguistic Knowledge strategies in Grades 3 & 4 than in Grades 1 & 2. The older Japanese students use more of these strategies than the French and Spanish students.

Since the students of Japanese are in a partial immersion program and have less time to study in the target language than the students of French and Spanish who are in full immersion programs, it is not surprising that their pattern of strategy use in Grades 3&4 resemble students of French and Spanish in Grades 1&2. It is also possible that Using Linguistic Knowledge strategies, especially Decoding, require more information before they can be effectively used in Japanese than in French and Spanish. It is not possible to interpret the performance of the students of Japanese because program and language were confounded.

It is possible, however, to compare the Linguistic Knowledge strategy use (mainly Decoding) of the students of Spanish and French to determine if there were any significant differences between mean proportions of strategy use by

Grade for the two language groups. A post hoc ANOVA was carried out to test the effects of Language and Grade on the mean proportion scores of Using Linguistic Knowledge of students of French and Spanish. The results were that no interactions were significant, but the main effects of both Grade and Language were significant: Grade: (N = 48), Grade F (1, 47) = 14.86, p<.000 and Language F (1, 47) = 26.77, p <.000.

On the test limited to French and Spanish, the students in Grades 1 & 2 used a larger proportion of Linguistic Knowledge strategies of their total strategy use, .48, than the older students, .29. Also, students of Spanish used a higher proportion of Linguistic Knowledge strategies, .51, than students of French, .26.

This last finding is consistent with the significant main effect of Language in the overall ANOVA. As stated above, the mean proportion of Linguistic Knowledge strategies for students of Spanish was .51, for students of Japanese it was .42, and for students of French it was .26. Specific comparisons, however, yielded no significant differences in means, (Neuman-Keuls, p > .05).

The ANOVA also produced a main effect of Rating on the mean proportion scores of Linguistic Knowledge strategies. The main effect indicates that the mean proportion of Linguistic Knowledge strategy use of total strategy use was significantly greater for students with a Low rating , .45, than it was for students with a High rating, .34.

Since Decoding was by far the most frequently used Linguistic Knowledge strategy and it accounted for 421 of the total 440 instances of strategy use, a post hoc ANOVA was carried out on the mean proportions of Decoding scores.

The results of the ANOVA and the follow up post hoc tests were essentially identical to those reported for the overall strategy category.

In summary, the primary immersion students who participated in this study used Linguistic Knowledge strategies in Reading a great deal, and the specific strategy of Decoding accounted for almost all of the instances of strategy use observed. It was found that there was an interaction between Language of Program and the Grade of the students in Decoding scores. Students of Japanese used less Decoding strategies than the others in Grades 1 &2, but their strategy use increased as a proportion of total scores in Grades 3&4. In contrast students of French and Spanish decreased their proportion of Decoding strategies in Grades 3 & 4. It was also found that students of Spanish produced the highest proportion of Decoding strategies overall, Japanese second, and students of French the smallest proportion of Decoding strategies, however specific comparisons did not identify any significant differences. The analysis also demonstrated that low-rated students used a significantly larger proportion of Decoding strategies than high-rated students.

Manipulating Information

Manipulating Information strategies are essentially cognitive strategies that involve the mental transformation of text to process meaning. There were 64 observations of Manipulating Information strategies which constituted a mean proportion of .06 of total reading strategies. The specific Manipulating Information strategies taken from the Hierarchical Classification Scheme and the mean proportion of total strategy use for each are given in Figure 13.

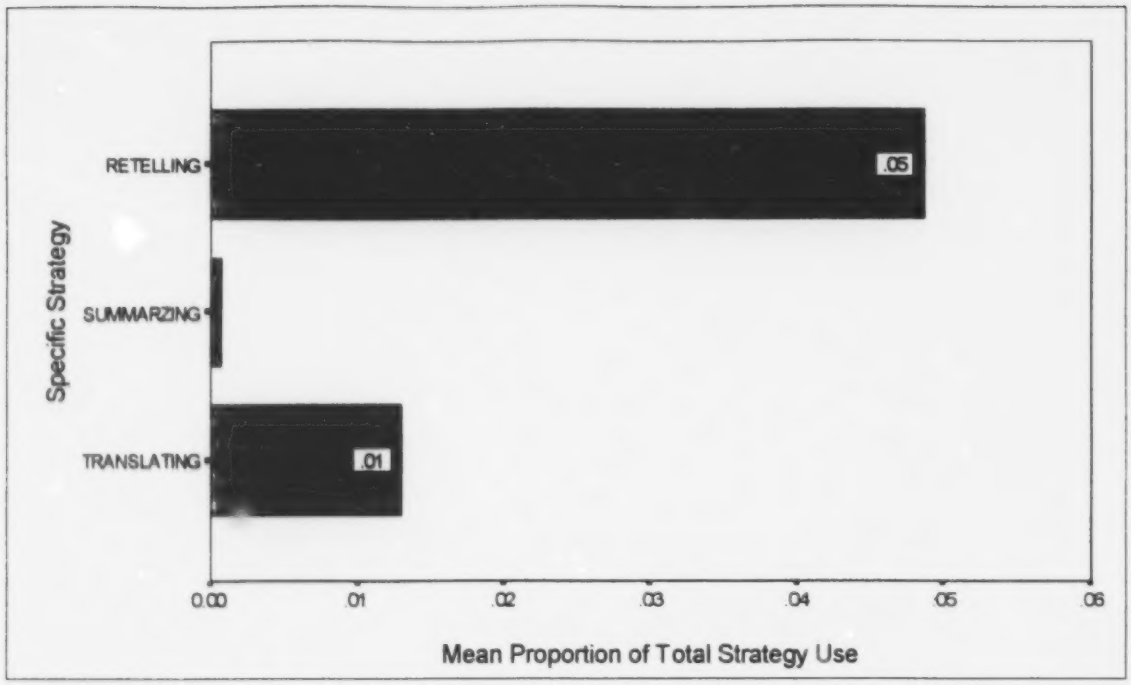

Figure 13. Mean proportions of specific Manipulating Information strategies: Retelling, Summarizing, and Translating.

The most frequently used Manipulating Information strategy was Retelling (N = 50, mean proportion = .05): The reader restates the text using his/her own words in order to process the text. These instances of Retelling were all responses to questions like "What are you thinking?" and never answers to "What is the story about?" An example of Retelling: "..That there were the two girls who were..who had found a dog and they arrived at the house, and ..the cat was mean and he didn't want ..he didn't like the dog." There were a few instances of Translating (N = 13, mean proportion = .01) where the reader translates a word or phrase into English to access the meaning. By contrast, this strategy is used very frequently in reading by students of foreign languages

taught in core courses. Summarizing, like Retelling, involves the reader restating the text, but in the case of Summarizing, the reader only restates the main ideas of the text to give the meaning of the whole. Interestingly, there was only one incidence of Summarizing in this research.

The mean proportion of total strategies of Manipulating Information of the students was analyzed using ANOVA by Grade, Language, and Rating. The results of the ANOVA were that there were no significant interactions, but the main effects of Grade, F (1, 71) = 4.36, p <.05, and Language, F (2, 71) = 3.43, p <.05, were significant.

The main effect of Grade indicated that for Grades 3&4 the mean proportion of Manipulating Information strategies of total strategies was .08, significantly larger than for students in Grades 1&2, .04. The main effect of Language suggested that there were significant differences in mean proportions of Manipulating Information strategies of the students of each Language: French, .09, Spanish .06, Japanese, .03. Specific comparisons were used to find the locus of the significant difference. There was a significant difference between the mean proportions of students of French and Japanese (Neuman-Keuls diff. crit = .06, p < .05). The other comparisons were not significant.

Retelling was the most frequently used Manipulating Information specific strategy. Since main effects occurred for the overall category for Grade and Language, the mean proportion scores of Retelling were tested using post hoc tests for the same effects. The average mean proportion score for Retelling of the Grades 3&4 students , .07, was significantly larger than that for students in

Grades 1&2, .02, t (70) = -2.64, p <.01. Mean proportion of Retelling scores differed significantly by Language:, F (2, 70) = 4.75, p < .01. The mean proportion of Retelling scores of students of French, .09, was significantly larger than the mean proportion of students of Japanese, .01, while neither group differed significantly from students of Spanish, .05 (Neuman Keuls diff. crit. = .06, p < .05).

In summary, the elementary immersion students used Manipulating Information strategies, primarily the Retelling strategy where they restated the meaning of the text in their own words when asked, "What are you thinking?" Their restatements usually contained most of the content of the text and there was only one incidence of Summarizing where the reader extracted the main ideas of the text to restate. Unlike older foreign language students, the students in this study used Translating infrequently. Students in Grades 3&4 used a larger proportion overall of Manipulating Information strategies than younger students and this difference held for the strategy Retelling. Students of French used a larger proportion of Manipulating Information strategies than students of Japanese, while the mean proportion of Manipulating Information strategies of Spanish students fell between the two. The differences in Language also held for the specific strategy of Retelling.

Writing

In this section the learning strategies that the elementary immersion students employed on the Writing task will be described by strategy category. The effects of Grade Level (Grade 1&2, Grades 3&4), Language of Program (French, Spanish, Japanese), and Teacher Rating (High, Low) on strategy use will be tested. When possible, post hoc tests will be employed to test effects of the independent factors on specific strategies. The subjects are the same as those who completed the Reading task and the strategies were coded using the same Hierarchical Classification Scheme described above.

Planning

Planning strategies in writing are metacognitive strategies which involve proposing strategies for an upcoming task and/or generating a plan for the parts, sequence, main ideas or language functions to be used in handling the writing task. There were 107 instances of Planning strategies observed during the writing task, constituting .28 of the students' total strategy use in Writing. Figure 14 presents the specific Planning strategies included on the Hierarchical Classification Scheme. Mean Proportions of total strategy use are displayed for each specific Planning strategy.

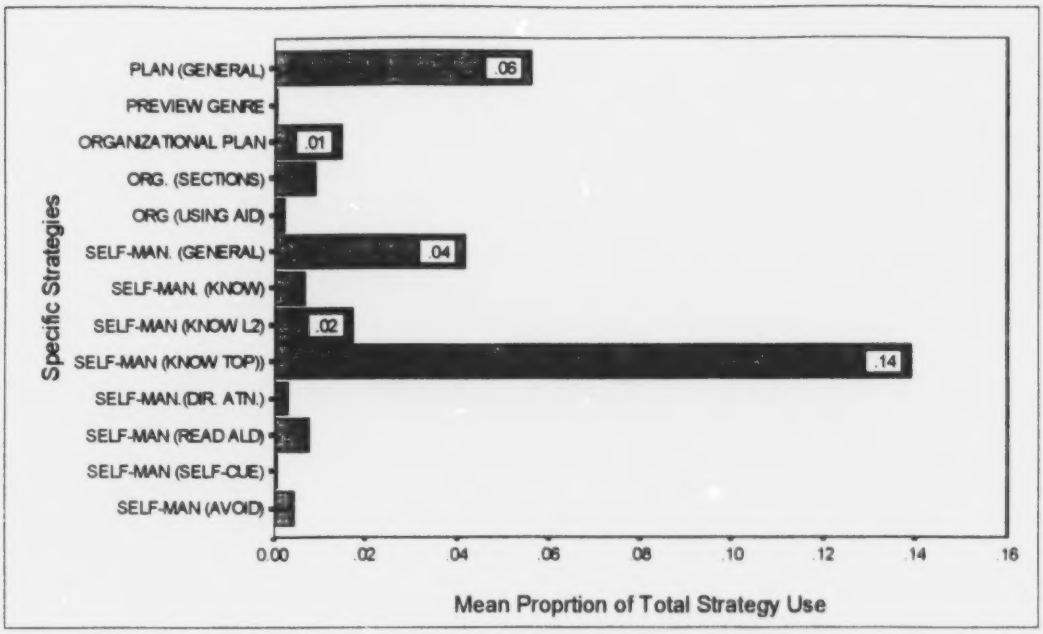

Figure 14. Mean Proportions of specific Planning strategies on the Writing Task: Planning (General), Previewing (Genre), Organizational Planning, Organization (Sections), Organization (Using Aid), Self-Management (General), Self-Management (Knowledge), Self-Management (Knowledge of L2), Self-Management (Knowledge of/ Interest in Topic), Self-Management (Directed Attention), Self-Management (Reading Aloud), Self-Management (Self-Cueing), and Self-Management (Avoid).

The Planning strategies were divided into Organizational strategies, those that involved organizing material/ideas to be written, and Self-Management strategies, in which the writer decides how to accomplish the writing task and and/or arranges conditions to do so. The most frequently used Planning strategy was the Self-Management strategy of Knowledge of or Interest in the Topic. This strategy involved the writer explicitly stating he/she chose the topic of the story (in this case the picture the story is based on) on the basis of knowledge about or interest in the topic. Since in most interviews the Researcher explicitly asked, "Why did you choose that picture to write your story about?" it is not clear if the

students would have generated these thoughts without the specific prompt. It is clear, however, that in many instances they did choose the picture on which to base their stories on knowledge of, or interest in the topic: "(I chose this picture)... because I like dinosaurs ...and boys." "(I chose this picture)...because it moves me....it is very beautiful...the colors." "(I chose this picture)...because I can say a lot of things about a dinosaur....an animal or something that is funny...that you don't see like in the world now, I know I can make lots of stories with it because nobody knows where it comes from .... so I can make lots lots of stories with it."

The students used few Organizational Planning strategies: There were three instances of Organizational Planning (Sections), in which the students planned their stories by sections, and there was one instance of Organizational Planning (Aid), where the student used an organizational aid, in this case a writing web, to help plan the story. Nine instances of Organizational Planning (General) were observed, where it was clear that the student was engaged in organizational planning but the specific kind of planning was not clear.

Self-Management strategies, other than Knowledge of or Interest in Topic, were used in a few instances: There were three instances of Self-Management (Knowledge) where the students' planning was guided by previously acquired knowledge. In six instances students' planning, in this case choice of topic, was guided by their knowledge of the vocabulary in L2 which is a Self-Management strategy, (Knowledge of L2). There were four instances of Self-Management (Reading Aloud), in which the students read out loud because this explicitly

stimulated ideas for the story. There were two instances of Self-Management (Directed Attention) where the students commented that they would focus attention on some aspect of the writing task in order to accomplish the task. One student used Self-Management (Self-Cue), he asked himself questions in order to stimulate ideas for the story. Another student used Self-Management (Avoid), he chose a topic for his story in order to avoid using L2 words he did not know. There were 16 instances of Self-Management (General) where the subjects engaged in self-management behaviors, but the specific strategy was unclear.

The students' mean proportions of Planning strategies were subjected to an ANOVA with Grade, Language, and Rating as the independent factors. The results of the ANOVA were that there were no significant interactions, but the main effect of Grade was significant, F (1, 71) = 5.63, $p < .05$. No other main effects were significant.

The main effect of Grade indicated that the mean proportion Planning scores for students in Grades 3&4 , .35, were significantly larger than the mean proportion of Planning scores of the students in Grades 1&2, .22.

Since, Knowledge of/ Interest in the Topic was the most frequently used Planning strategy in Writing, a post hoc test was carried out to determine if there was a significant difference between Grades for this specific strategy. The mean proportion for Grades 1&2 , .11, was not significantly smaller than the mean proportion for Grades 3&4, .17, $p > .05$.

In summary, elementary immersion students used Planning strategies on the Writing task. The most frequently observed specific strategy was Knowledge of/ Interest in the Topic. For the overall Planning strategy category there was a main effect of grade which meant that the older students engaged in more Planning strategies than the younger students. This effect of Grade did not hold for the Knowledge of/ Interest in the Topic specific strategy which means that this strategy was used to the same degree by older and younger students. This also suggested that the main effect of Grade on the overall score reflected differences in the cumulative use of Planning strategies other than Knowledge of / Interest in Topic.

Monitoring

Monitoring strategies in writing involve checking, verifying, and/or correcting performance on a writing task. A total of 101 Monitoring strategies were observed during the Writing Task. They constituted a mean proportion of .17 of the students' total strategy use on the task. The specific Monitoring strategies for Writing taken from the Hierarchical Classification Scheme are listed in Figure 15 along with the mean proportion of total strategy use for each specific strategy.

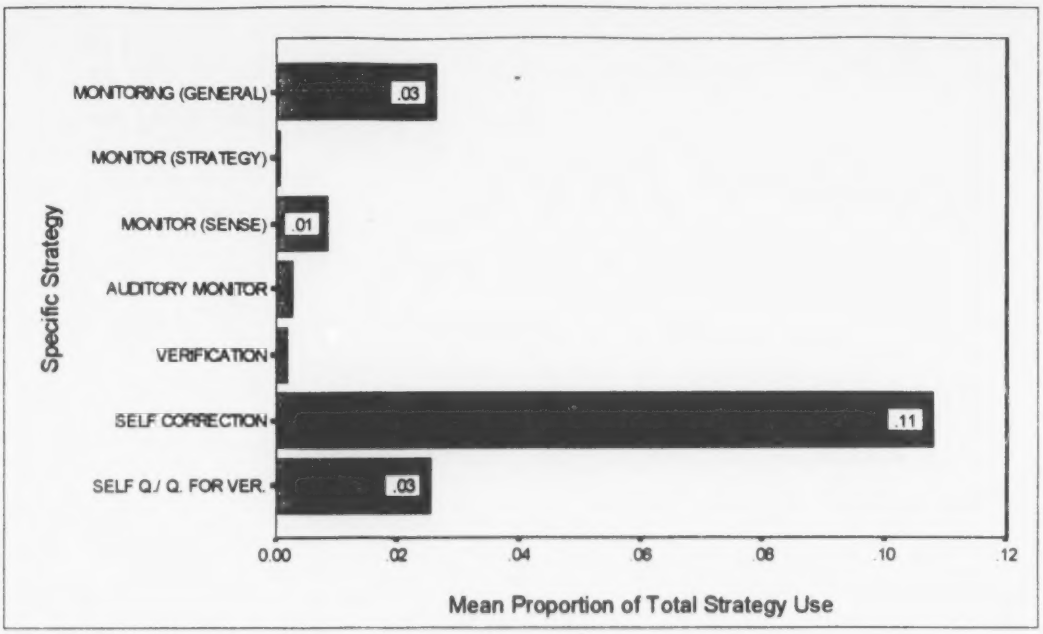

Figure 15. Mean proportions of specific Monitoring strategies on the Writing Task: Monitoring (General), Monitoring (Strategy), Monitoring (Sense), Auditory Monitoring, Verification, Self-Correction, Self-Questioning / Questioning for Verification.

The most frequently used Monitoring strategy was Self-Correction (N = 57, mean proportion = .11), the students corrected their errors, or perceived errors, either when writing or when orally telling the story that they would write. There were 17 instances of behaviors coded as Self-Questioning / Questioning for Verification (mean proportion = .03) where the students either asked themselves or the Researcher whether their productions were correct: "Is that how you spell it?". In the think aloud interview it is often difficult to know when a question is self-directed or when it is directed to the Researcher. There were seven instances where the student used Monitoring (Sense), either "That makes sense," or "That doesn't make any sense." In two instances students used

Auditory Monitoring to determine whether a written product sounded right and in two other instances students used Verification to check whether a prediction or an inference was correct. In only one instance did a student use Monitoring (Strategy) to determine whether the strategy she was currently using was effective or not. There were 15 behaviors coded as Monitoring (General) because, although the behaviors were clearly Monitoring strategies, the specific strategy was unclear.

The mean proportions of total strategy use of Monitoring strategies were subjected to analysis using ANOVA with Grade, Language, and Rating as independent factors. The results of the analysis were that there were no significant effects.

In summary, the elementary immersion students used Monitoring strategies on the Writing Task. The most frequently used Monitoring strategy was Self-Correction. Self Questioning / Questioning for Verification was also used. There were no differences in Monitoring strategy use across grades, languages of study, or high- and low-rated students.

Selective Attention

Selective Attention strategies in writing involve deciding in advance to attend to specific aspects of the task that aid in performance of writing, including language processing and/or deciding whether or not an aspect of the task is important. A total of 39 behaviors were coded as Selective Attention on the Writing Task which constituted an average mean proportion of .06 of total strategy use during Writing. Figure 16 lists the specific strategies in the

Hierarchical Classification Scheme that are relevant to the writing task and the mean proportion of total strategy use for each specific strategy.

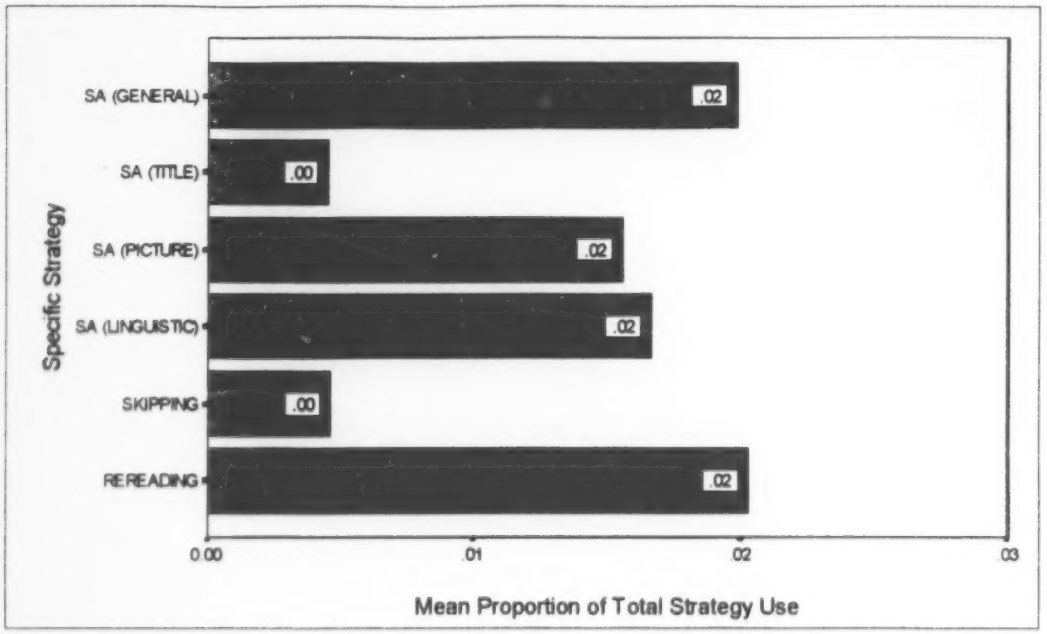

Figure 16. Mean proportions of specific Selective Attention strategies on the Writing Task: Selective Attention (General), Selective Attention (Title), Selective Attention (Picture), Selective Attention (Linguistic Features), Skipping, Rereading.

The most frequently used Selective Attention strategy was Rereading (N = 19, mean proportion = .02), in which the students reread what they had written. There were also instances of Selective Attention (Picture), (N = 8) and Selective Attention (Linguistic Features), (N = 9). Three behaviors were coded as Selective Attention (Title) and there were two instances of Skipping, where students decided not to pay attention to a problem in writing. The following specific strategies included in the Hierarchical Classification Scheme are more relevant to reading than to writing: Selective Attention (Known Words), Selective

Attention (Key Words), Selective Attention (Pronunciation), Skipping, and Looking back. There were no instances of these behaviors on the Writing Task.

The mean proportions of total strategy use of Selective Attention strategies were subjected to analysis of variance with Grade, Language, and Rating as factors. The results of the analysis were that there were no significant interactions, but the main effects of Grade F (1, 71) = 6.96, p <.01, and Rating, F (1, 71) = 4.63, p <.05, were significant. The effect of Language was not significant, p > .05.

The main effect of Grade indicates that the mean proportion of Selective Attention scores of total scores of students in Grades 1&2, .09, was significantly larger than the mean proportion of scores for students in Grades 3&4, .03. The main effect of Rating indicated that the mean proportion of Selective Attention scores of total scores for high-rated students, .08, was significantly larger than the mean proportion for low-rated students, .04.

The main effects indicate that younger students and high-rated students used a larger proportion of Selective Attention strategies. This is a surprising result because it is usually assumed that strategy use should be more similar for younger and low-rated students or more similar for high-rated and older students. The total number of observations is small for each specific strategy, and the instances of Selective Attention are spread over a number of strategies. The pattern of the data does not produce enough power to allow post hoc tests. A comparison of mean proportion scores across ratings and grades for Rereading, Selective Attention (Picture) and Selective Attention (Linguistic

Features), does indicate that the main effects of Grade and Rating are consistent for each of these strategies: Rereading, Grades 1&2 (.03), Grades 3&4 (.01); Selective Attention (Picture), Grades 1&2 (.02), Grades 3&4 (.02), Selective Attention (Linguistic Features), Grades 1&2 (.03), Grades 3&4 (.01); (Rereading), High (.03) Low (.01), Selective Attention (Picture), High (.02), Low (.01), Selective Attention (Linguistic Features), High (.03) Low (.01).

In summary, the elementary immersion students who participated in the study used Selective Attention strategies on the Writing Task. The most frequently used specific strategy was Rereading. The mean proportion of Selective Attention strategies of total strategies varied with the Grade and the Rating of the students. high-rated students used a larger proportion of Selective Attention strategies than low-rated students, and younger students used a larger proportion than older students.

Inferencing

Inferencing strategies involve guessing the meaning or usage of unfamiliar language items or usage from available information. This strategy is more pertinent to the Reading Task than to the Writing Task. However, four instances of strategy use on the Writing Task were characterized as Inferencing General and involved making inferences about usage.

Prediction

Prediction strategies are also more relevant to the demands of the Reading Task than to the Writing Task. They involve making guesses about

what will happen in a text. There were no incidences of any Prediction strategy use on the Writing Task.

Elaboration

Elaboration strategies in writing involve making connections between background knowledge and/or personal experiences or feelings and the writing task at hand to construct meaning. Since the focus of this research was on learning strategies, elaborations about the picture that constituted the content of the stories the children wrote were not counted. There were 84 instances of behaviors that were coded as Elaboration strategies on the Writing Task, constituting .19 of total strategies used on the task. Figure 17 displays a list of the specific Elaboration strategies relevant to Writing and their corresponding mean proportions.

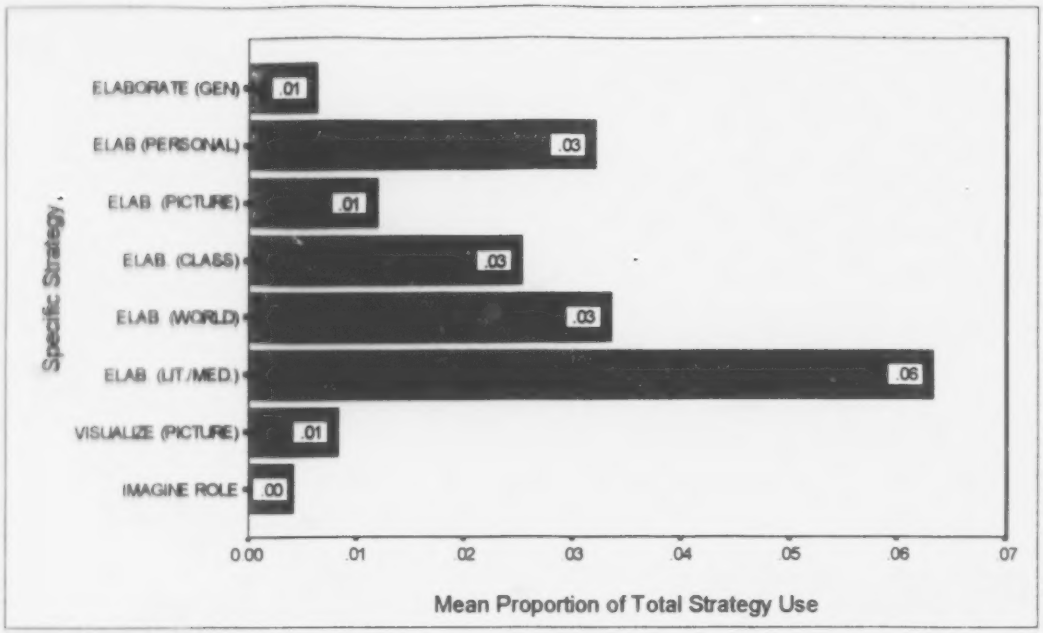

Figure 17. Mean proportions of specific Elaboration strategies on the Writing Task: Elaboration (General), Elaboration (Personal), Elaboration (Picture), Elaboration (Class), Elaboration (World), Elaboration (Literature/Media), Visualizing Pictures, Imagining Roles.

The most frequently used Elaboration strategy was Elaboration (Literature / Media), (N = 30, mean proportion = .06). This strategy involves the writer using previous knowledge from books, movies, or television to help construct his/her story. Examples are: "I think this is a fairy tale...because the frogs are flying," or "....I remembered Mary Poppins when I saw the bird in the window (in the stimulus picture)...I can say like that the boy played with the bird in the room and...". The next most frequently used Elaboration strategy was Elaboration (Personal), (N = 15, mean proportion = .03) the writer uses personal judgments or reactions to help him/her construct the text, "(I am thinking that)...the dinosaur looks strange...nothing else." Students also used Elaboration (Class), which is

essentially a subset of personal elaborations, (N = 12, mean proportion = .03) in which they referred to knowledge or experiences in class when constructing text, "I have written since I was in nursery school because I wrote numbers, but not a lot of words, just like .... we had to write little books." Elaboration (World) was used by some students (N = 12, mean proportion = .03), they used world knowledge to help construct their text. "She is running because the king is going to like torture her...they did things like that long ago." In seven instances students used Elaboration (Picture), they used information about the picture to elaborate on their text but not for story content. In four instances students reported visualizing a picture to help them construct text. There were two instances where students reported imagining themselves in a role in the story. There were two strategies that were coded as Elaboration (General) because the specific strategy was not clear. Elaboration (Text) is the only specific strategy listed in the Strategy Hierarchy that is relevant to Reading rather than to Writing.

The mean proportion of Elaboration strategies of total strategy use were submitted to an analysis of variance with Grade, Rating, and Language as independent factors. The analysis yielded no significant effects.

The primary immersion students in this study employed Elaboration strategies on the Writing task. The most frequently used strategy was Elaboration (Literature/Media), the students used knowledge of books, movies, or television to help them construct their texts. The students also used a variety of other Elaboration strategies which involved using previous information from

personal experiences and world knowledge and information about the picture to help them construct text. The overall mean proportions of Elaboration strategies of total strategy use did not vary by Grade, Language, or Teacher Rating.

Linguistic Knowledge

Linguistic Knowledge strategies in writing involve applying knowledge about regularities and/or relationships of words or phrases in the target language, or between languages, in order to construct text. A list of the Linguistic Knowledge strategies included in the Hierarchical Classification Scheme is given in Figure 18 along with the mean proportion of total strategy use on the Writing Task for each specific strategy.

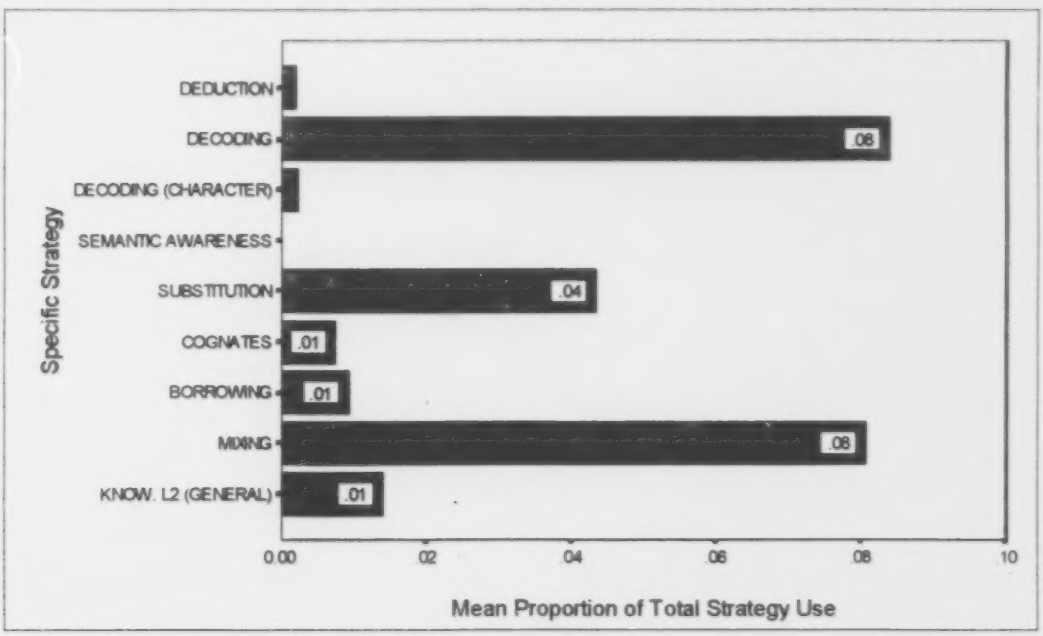

Figure 18. Mean proportions of specific Linguistic Knowledge strategies: Deduction, Decoding, Decoding (Character), Semantic Awareness, Substitution, Cognates, Borrowing, Mixing Languages, Knowledge of L2 (General).

The most frequently used Linguistic Knowledge strategies employed by the students were Decoding (N = 47, mean proportion = .08) and Language Mixing (N = 40, mean proportion = .08). Decoding in writing involves the explicit use of phoneme-grapheme correspondences to write words, except decoding Kanji in Japanese which is coded as Decoding Characters. When students "sound out" words in order to spell them, they are decoding: "d....d.....(writes 'd')...iiiiii ...(writes 'i')... no..... (writes 'no')..."

The strategy Language Mixing involves a student using a word from L1 when he/she does not know the equivalent word in L2. In this research coding of Language Mixing was limited to words and short phrases. Language Mixing was coded only when the children were telling what they were going to write: "Je pense que le dinosaure...commence à être wild...sauvage...et il smash le whole school."

The next most frequently used Linguistic Knowledge strategy was Substitution (N = 22, mean proportion = .04): the students substituted known words and/or phrases in L2 to express a concept for which they did not know the exact word in L2: "(Student explains that she did not know how to write 'to take a walk'..)...Watashi (I) just put 'I like to play" instead." In 8 instances students used the strategy Borrowing, in which they inserted an L1 word in an L2 sentence but pronounced the L1 word with an L2 accent and/or intonation: "...Then it took like a year for all the frogs to be packé...packé and ready to .... (Interviewer asked what "packé" means, it sounds like a French verb and is

conjugated properly, but the word does not exit.).... To packer ones things and be ready to go."

Students made explicit use of Cognates, words that are orthographically and phonologically similar in L1 and L2, in only three instances. Semantic Awareness, understanding that words can have different meanings, was apparent only once. In one case only was there evidence of a student using Deduction, knowledge of grammatical regularities of L2, on the Writing Task. Decoding Character, using a strategy to decode Kanji in Japanese, occurred only once; the student thought of the shape of the character and how it resembled the idea it expressed. In 10 instances behaviors were coded as Using Linguistic Knowledge (General) because the nature of the specific strategy was unclear.

The mean proportions of total strategy use of Linguistic Knowledge strategies were subjected to an analysis of variance with Grade, Language, and Rating as factors. The results produced no significant interactions, but the main effect of Rating was significant F (1, 71) = 7.07, p = .01. The main effects of Language and Grade were not significant.

The main effect of Rating indicated that the mean proportion of total scores of Linguistic Knowledge strategies for low-rated students, .32, was significantly larger than that for high-rated students, .17. Since the mean proportions of the specific strategies of Decoding, Mixing, and Borrowing each contributed substantially to the overall mean proportion of Linguistic Knowledge

strategies, post hoc t-test were conducted to test whether the difference between students with different teacher ratings held for the specific strategies.

The post hoc specific comparisons indicated that for the strategy of Decoding the mean proportion of total strategy use of the low-rated students, .13, was significantly larger than the mean proportion of the high-rated students, .03, $t(70) = -2.63$, $p < .01$. A similar pattern was found for Language Mixing: the low-rated students produced a mean proportion of .12 Language Mixing strategies, which was significantly larger than the mean proportion of the high-rated students, .04, $t(70) = 2.64$, $p < .01$. The difference between the mean proportions of Substitution, however, were not significant, $p > .05$, and the pattern of scores was different: The high-rated students produced a larger mean proportion of Substitute strategies, .05, than the low-rated students, .03.

In summary, Linguistic Knowledge strategies were used frequently by the students who participated in this study. The most commonly used strategies were Decoding, Language Mixing, and Substitution. The overall mean proportions of Linguistic Knowledge strategies of total strategy use varied by teacher rating of the students. The low-rated students used more of these strategies than the high-rated students. When the specific strategies were tested for effects of Rating, it was found that low-rated students used more Decoding and more Language Mixing strategies than high-rated students. There was no effect of Rating on the mean proportion of Substitution strategies, and in fact the pattern was reversed and the high-rated students produced a larger mean

proportion of Substitution strategies than the low-rated students. This difference, however, was not significant.

Manipulating Information

Manipulating Information strategies in writing involve transforming the text in order to construct meaning. In Reading the specific Manipulating Information strategies include Retelling, Summarizing, and Translating. Translating is the only strategy relevant to the demands of the Writing Task. A behavior in writing was coded as Translating if it involved the use of L1 to generate content in L2. In this research most of the Translating strategies involved students generating ideas for their stories in L1 and then translating these concepts into L2: "I need to think of what 'walks" is in Japanese, " "I am thinking about what I want to write about...and see if I would know how to write it in Japanese." There were 22 instances of Translating which constituted .04 of total strategy use on the Writing Task.

The mean proportions of Translating of total strategy use were tested using ANOVA by Grade, Language, and Rating. There were no significant interactions or main effects.

In summary, the only Manipulating Information strategy in our Hierarchical Classification Scheme that was relevant to the Writing Task was Translating, which was used by some of the students and constituted a mean proportion of .04 of total strategy use. The mean proportions of Manipulating Information did not vary by Rating, Language, or Grade.

Ranges of Different Strategies

The number of different strategies, or range of strategies (Range), used by each subject across both the Reading Task and the Writing Task was calculated. This calculation included only specific strategies observed and categorized. Strategies categorized as "General" either because the specific strategy could not be identified or because two experimenters could not agree on the specific category, were not included in the Ranges count. The mean number of different strategies used by subjects was 9.28, (S.D. = 3.74.) The minimum number of different strategies used by a single student was one while the maximum was 18.

The Range scores for all subjects were then analyzed by Grade (Grades 1&2, Grades 3&4), Teacher Rating (High, Low), and Language (French, Spanish, Japanese). The mean Range scores for strategies by Language, Grade and Rating are presented in Table 4.

Table 4.

Mean Ranges of Subjects in Grades 1&2 and 3&4 by Language and Teacher Rating

	GRADES 1 & 2			GRADES 3 & 4		
	FREN	SPAN	JAP	FREN	SPAN	JAP
HIGH RATING	12.3	11.7	7.7	9.8	10.2	9.5
LOW RATING	6.5	9.0	9.2	10.0	10.0	5.5

The Analysis of Variance (ANOVA) produced a significant three-way interaction of Grade by Language by Rating, $F(2, 60) = 4.22$, $p<.05$. The main effect of Rating was also significant, $F(1, 60) = 4.90$, $p <.05$.

Figures 19a, and 19b represent the mean strategies Range scores for high- and low-rated students in each of the three languages for Grades 1&2 and 3&4.

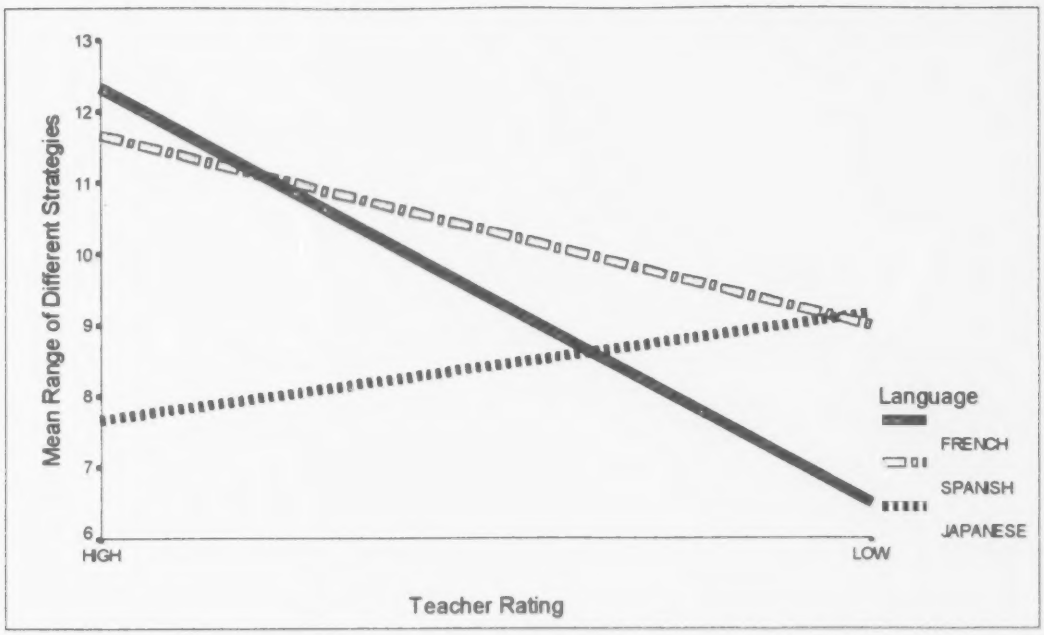

Figure 19a. Ranges of strategy use of elementary immersion students in Grades 1&2.

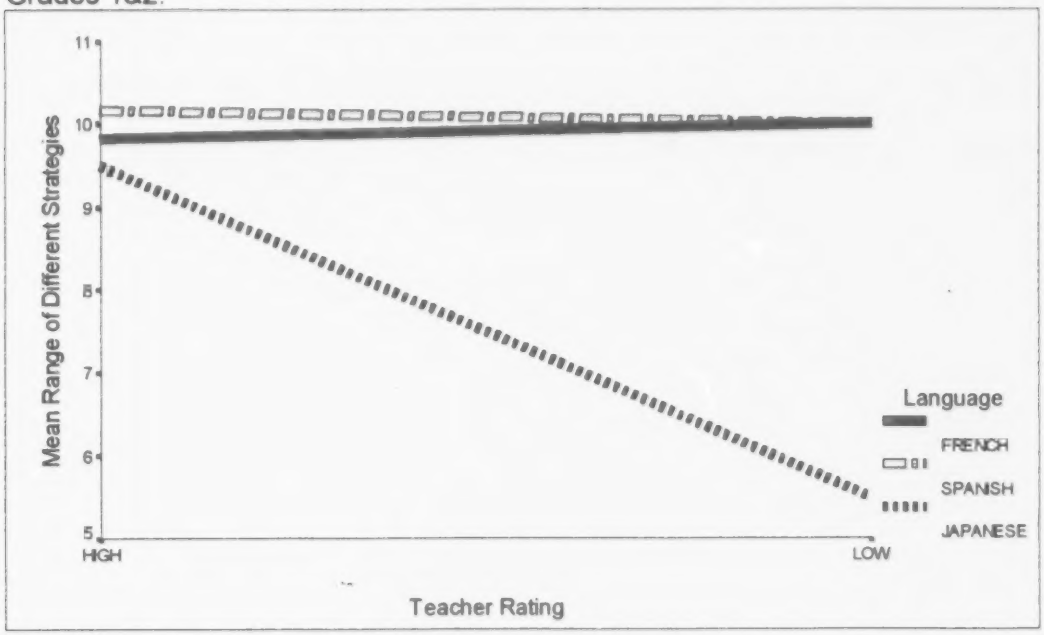

Figure 19b. Ranges of strategy use of elementary immersion students in Grades 1&2.

An examination of Figure 19a reveals that the range of strategies for the students of Japanese in Grades 1 &2 differs in slope from those of students of French and Spanish. While the high-rated students of French and Spanish produced a larger range of strategies than the low-rated students in Grades 1 and 2, the opposite pattern occurred for Japanese. In figure 19b it can be seen that the high-rated and low-rated students of French and Spanish in Grades 3 and 4 produced about the same size ranges of different strategies. However, the students of Japanese in Grades 3 and 4 looked more like the younger students of French and Spanish, as the high-rated students produced more strategies than the low-rated students.

As discussed above in the description of strategy use by strategy categories, It is difficult to interpret differences in scores between languages because there were differences not only in the linguistic demands of the different languages, but also important differences between the immersion programs from which we drew the subjects in the different languages. The Japanese immersion program in particular differed from the French and Spanish programs, because it was a partial immersion program, while the French and Spanish programs were full immersion programs. The students of Japanese therefore spent only half their day in Japanese, while the students of French and Spanish spent their whole day in the target language.

It is not surprising in the light of the difference in time spent in the target language that the Japanese students' cognitive strategy use reflected patterns of strategy use of earlier grades in the full immersion programs. However,

because language and program were confounded in this study it is not possible to make firm statements about specific comparative differences in ranges of strategy use across grades by language when students of Japanese differ from students of French and Spanish.

. The main effect of rating reflects the difference between mean ranges for high-rated students, 10.19 and low-rated students, 8.36. This main effect , however, must be considered in the light of the three-way interaction described above.

The patterns of ranges of strategy use differed for students of Japanese from the patterns for students of French and Spanish, and these differences may be attributable to whether the programs were full or partial immersion - a difference that falls outside the scope of this research. In order to better understand the interaction between Grade, Language, and Rating on Ranges scores of students in full immersion programs, we conducted a second analysis limited to French and Spanish to further examine the effects of Language (French, Spanish), Grade and Rating on the number of different strategies used by elementary full-immersion program students.

The total number of subjects included in this second analysis was 48. The interaction between Grade and Rating was significant, $F(1, 40) = 5.06$, $p < .05$. The main effect of Rating was also significant, $F(1, 40) = 5.06$, $p < .05$.

A reexamination of the data representing ranges scores in Figures 19a and 19b, graphically demonstrates the locus of the Grade by Rating interaction. It can be seen that for students of French and Spanish in Grades 1&2, high-

rated students produce a larger range of different strategies than low-rated students. However, in Grades 3&4, this difference disappears and students of both languages, both high-rated and low-rated produce the same numbers of different strategies. The main effect produced by Rating reflects the differences seen in Grades 1 and 2. There is no significant difference by Rating for students in Grades 3 & 4.

In summary, the number of different strategies each student used on the Reading and Writing tasks together was calculated as Range scores. The Range scores were analyzed by Grade, Language, and Rating. The result of the ANOVA was a complex three-way interaction which, when rendered graphically, indicated that students of Japanese produced Ranges scores that were different in pattern than those of students of French and Spanish. It was not possible to interpret this finding because the Japanese program is a partial-immersion program and the effects of kind of program and language of study are confounded. A second analysis limited to students of French and Spanish was carried out. The results indicated that high-rated Grades 1& 2 students use more different strategies than low-rated students in Grades 1 & 2. High-rated and low-rated students use the same numbers of different strategies in Grades 3 & 4.

Summary

The primary school immersion students who participated in this study used a variety of learning strategies when reading and writing in their second languages. These strategies and their relative contributions to total strategy use are described above. Each category of strategies and a number of the specific strategies were analyzed by Grade (Grades 1&2, 3&4), Teacher Rating (High, Low), and Language of Study (French, Spanish, Japanese) of the students. The results of these analyses are summarized below.

Differences in Learning Strategy Use Between high- and low-rated Students

- -Reading: low-rated students produced a higher proportion of Linguistic Knowledge strategies than high-rated students. This was largely due to the finding that the low-rated students' use of decoding strategies produced a much higher proportion of their total strategy use than high-rated students.

- -Writing: As on the Reading Task, low-rated students produced a higher proportion of Linguistic Knowledge strategies than high-rated students. Low-rated students also produced a higher mean proportion of Decoding and Mixing strategies.

- -Writing: Selective Attention strategies represented a larger mean proportion of total strategy use for high-rated students than for low-rated students.

- -Range of Strategy Use: high-rated students of French and Spanish in Grades 1&2 produced a larger range of strategies than low-rated students in the same grades; however, high- and low-rated students of French and Spanish produced about the same range of strategies in Grades 3&4.

- Students of Japanese produced a different pattern in range of strategy use. In Grades 1&2 there was no significant difference in range of strategies

between high- and low-rated students. In Grades 3&4 high-rated students of Japanese produced a larger range of strategies than the low-rated students.

Differences in Learning Strategy Use By Grade.

- Reading: Older students used a higher proportion of Monitoring strategies than younger students; specifically a higher proportion of self-corrections.

- Reading: Older students produced a higher proportion of Prediction strategies than the younger students. The older students used a higher proportion of Predictions from pictures than the younger students.

- Reading: Younger students used a higher proportion of total Elaboration strategies and more Elaborations from pictures than older students. The younger students used more elaborations from pictures than the older students. There were no differences between younger and older students on mean proportion of personal elaborations.

- Reading: Younger students of French and Spanish used a larger proportion of Linguistic Knowledge strategies than the older students. This general effect was due especially to the younger students' greater use of decoding strategies

- Reading: Older students used a higher proportion of Manipulating Information strategies than younger students. This general effect was largely due to the fact that the older students used a higher proportion of Retelling strategies, they restated what had happened in the text.

- Reading: Older students used a higher proportion of Inferencing (Text) than younger students.

- Writing: Older students used a higher proportion of Planning strategies than younger students. However, students of both groups chose topics to write about that they knew or were interested in to the same degree. This indicates that the older students used a higher combined proportion of other organization and self-management strategies.

- Writing: Younger students used more Selective Attention strategies than older children in writing. Although there were not enough instances of any one strategy to carry out post hoc tests, the scores indicated that younger students reread their work more than older students and they focused attention on linguistic features of words more than older students.

Differences in Learning Strategy Use Between Students of Different Languages

- Reading: Students of French produced a significantly larger mean proportion of Inferencing (Text) strategies than students of Spanish and Japanese.

- Reading: Students of French produced a significantly larger mean proportion of Prediction strategies than students of Japanese. This effect, however, did not hold true for Predictions from pictures.

- Reading: Students of Japanese produced a different pattern of use of Linguistic Knowledge strategies than students of French and Spanish. In Grades 1&2 students of Japanese used significantly less Linguistic Knowledge strategies than the other students. In Grades 3&4 students of French and Spanish used less Linguistic Knowledge strategies than students in Grades 1&2, while the students of Japanese increased their use of these strategies in Grades 3&4.

- Reading: Students of Spanish produced the largest proportion of Decoding strategies.

- Reading: Students of French produced a significantly larger mean proportion of Manipulating Information strategies than students of Japanese, this was mainly due to the specific strategy Retelling which constituted a larger proportion of total strategy use for students of French than for students of Japanese.

- Writing: There were no specific Language effects found on strategy use on the writing task.

- Ranges of strategy use: As described above, students of Japanese produced a different pattern in range of strategy use from students of French and Spanish. For students of Japanese there was no difference in range of

strategy use between high- and low-rated students in Grades 1&2, however, in Grades 3&4 high-rated students used a greater range of strategies than low-rated students. For students of French and Spanish the pattern was reversed. While in Grades 1&2, high-rated students used a larger range of strategies, in Grades 3&4 the range of strategies was the same for high- and low-rated students.

Discussion

Differences in Strategy Use Between High-rated and Low-rated Students

The results of this analysis indicate that there were few significant differences between more and less effective immersion language learners in the frequencies with which they used specific strategies or the frequencies with which they used strategies within strategy categories. However, the differences that were observed revealed important aspects of learning strategy use. The one outstanding difference between more and less effective learners was in the degree to which they depended on decoding in reading and writing. The less effective readers used decoding as .45 of their total strategy use while the more effective readers used decoding as .34 of their total strategies. In writing, more effective learners used decoding as .17 of their total strategy use while for less effective learners decoding accounted for .32 of their strategies.

All the elementary immersion students relied heavily on decoding in reading. This is to be expected because the younger students were just learning to the phoneme-grapheme correspondences. By third grade the students were able to decode and knew their letter-sound correspondences. Since the procedure on the experiment was to move students to an easier text if they had much difficulty with the grade-appropriate text, it can be assumed that by Grades

3&4 all the students had the required knowledge to get meaning from the texts they read.

What is interesting is that Rating and Grade did not interact. This means that less effective students, no matter the grade level, and regardless of whether they were familiar with the letter-sound correspondences, used decoding strategies as a larger proportion of their total strategies than more effective students. The reliance of less effective learners on decoding, then, was not dependent on their lower level of language proficiency, but rather reflects their specific learning strategy behavior. This suggests that, at least in the higher grades, the less effective students focused on constructing meaning from the text word-by-word rather than seeking to construct larger units of meaning. What is the story about? What is going to happen? Thus, the weaker used primarily a word-based strategy rather than strategies that seek out larger units of meaning.

The similar pattern in writing suggests that this pattern of word-based strategy use is basic to the less effective students' pattern of learning strategy use. Furthermore, on the Writing Task it was also found that less effective students substituted English words when they did not know the correct word in the L2 more than the effective learners. While the more effective learners substituted different words in L2 for unknown words more than less effective learners (this difference was a very clear trend, but the difference was not statistically significant). The words in L2 that were used as substitutes by the more effective learners were no more complex or complicated than those used in

the rest of the conversation, "A thing around his head," but they were sufficient to communicate meaning. The words and phrases used as substitutes for unknown words by the more effective students were well within the vocabulary knowledge of the less effective students. The difference was that the more effective students used substitutes within the second language while the less effective students, when they ran into difficulty, reverted to using English. The less effective students' strategies focused on identifying specific cross-language word-level translation equivalents: The more effective students' strategies focused on identifying within-language L2 conceptual equivalents. The less effective students focused attention on problem solving at the more superficial lexical level of processing, while the more effective students focused attention on problem solving at a deeper conceptual level. Again, this suggests that the less effective students were focusing attention on identifying specific words in L2 rather than focusing first on creating units of meaning where different specific segments, words or phrases, could be used to convey the overall meaning.

The high-rated students used a larger proportion of Selective Attention learning strategies than low-rated students on the Writing Task. Selective Attention strategies included a number of different specific strategies: Selective Attention to Picture, Rereading, Selective Attention to Pronunciation, Skip, Selective Attention to Title, etc. Strategy use was spread out across the specific strategies within the category so it is not possible to identify one or two strategies that are responsible for the effect of teacher-rating. Overall, this

finding suggests that the high-rated students are more able to direct their attention to selected aspects of the task than low-rated students.

When the students of French and Spanish were examined together, significant differences were found in Grades 1&2 between the high- and low-rated students. The high-rated students used a greater number of different strategies than the low-rated students. This finding suggests that more effective students use a greater range of different strategies. However, in Grades 3&4 the high- and low-rated students used about the same number of different strategies, the low students having increased their strategy use to approach that of the high-rated students. The implication of this change is that by Grades 3&4 low-rated students had acquired the use of the same number of different strategies as the high-rated students.

Overall, the most important difference between more and less effective students was that low-rated students used more word-based, lexical, strategies in reading and writing than high-rated students.

Differences in Learning Strategy Use By Grade.

The pattern of differences in strategy use in Reading between the students in Grades 1&2 and those in Grades 3&4 is in some ways similar to the differences between more- and less-effective students. The pattern suggests that the older students were using more story-based strategies while the younger students were using more word-based strategies. Again, there is evidence that this difference is due to learning strategy use and not to knowledge of the target language.

The Grades 3&4 students used significantly more Prediction strategies, which involves guessing what will happen in the story. Since the older students used significantly more Prediction from Picture strategies it is clear that using the strategy of Prediction was not dependent on greater knowledge of the target language. Rather, this finding suggests that the older students paid more attention to the text as a story and actively made connections between their background knowledge and the picture or text to try to construct meaning by guessing what would happen in the text.

The younger students used more Elaboration strategies than the older students, especially Elaboration from Pictures. This strategy involves making connections between background knowledge and the material on the task, but it does not involve actively constructing elements of the story. The younger children were able to make connections between their background knowledge and the pictures or text, but they did not take the further step of the older children and try to construct meaningful stories on the basis of this information.

Similarly, older students used a significantly higher proportion of Manipulating Information strategies on the Reading Task than the younger students, especially the strategy Retell. Retell involves the act of reconstructing what has already been read using the student's own words. In order to comprehend a text it is necessary for the reader to reconstruct the propositions of the text in an organized manner in her own long term memory. The younger students all read texts, with pictures, that were appropriate to their grade level in reading. They were able to read many of the words and talk about the story.

They had the opportunity to use the Retell strategy if they chose to, and a few did, but for the most part when asked, "What are you thinking?" the younger children focused more on elaborating on pictures and on decoding. The older students responded to "What are you thinking?" by retelling the story more frequently suggesting that they were more actively engaged in building internal mental representations of the story.

The learning strategy Inferencing from Text, making inferences about the meaning of a text from other parts of the text, was used as a significantly higher proportion of total strategy use by students in Grades 3&4 than students in Grades 1&2. This finding is not surprising since a number of the students in Grades 1&2 were not able to process a great deal of text because they were beginning readers. It is consistent with the thesis, however, that older students were using more story-based strategies than younger students.

The younger students of French and Spanish, like the less-effective students, used a significantly higher proportion of Using Linguistic Knowledge strategies, particularly Decoding, than the older students in Grades 3&4. This is not surprising since the Grade 1 students and some of the Grade 2 students were learning their letter-sound correspondences. This word-based strategy is characteristic of younger learners. What is interesting is that, as discussed above, it appears to continue as the primary strategy of less-effective learners, while more effective learners adopt more story-based strategies in Grades 3&4.

The older students in Grades 3&4 employed a larger proportion of Monitoring strategies on the Reading Task than the younger students, and

specifically a larger proportion of self-correction strategies. This is interesting because the older students did not produce a larger proportion of errors to correct. Rather, it appears that the older students had developed more effective metacognitive skills which involve not just doing the task, but thinking about how one does the task.

Evidence for the greater use of metacognitive strategies by older students is also provided by the results of the strategies used on the Writing Task. Students in Grades 3&4 used significantly more Planning strategies than the younger students. Planning strategies in writing involve thinking about how to go about the task, thinking about overall organization of the text to be written, thinking about how best to complete the task . Planning strategies are usually not specific writing or spelling strategies and therefore are not dependent on content knowledge of the target language. The younger students completed the writing task while demonstrating use of a number of cognitive strategies which allowed them to manipulate the material in order to construct meaning. However, these strategies did not involve the more abstract, metacognitive understanding of the task that is required in order to use the strategy Planning. Students in Grades 3&4 who demonstrated a significantly higher proportion of Planning strategies were more able to consider the task of writing a story as an object that they could control through organization and self-management strategies.

A surprising finding was that younger students produced a higher mean proportion of Selective Attention strategies on the Writing Task than older students. High-rated students also produced a higher mean proportion of

Selective Attention strategies than low-rated students. Usually, as with Decoding, it is expected that younger and less-effective students are more similar in learning strategy use, not younger and more-effective students. Since the actual strategy use was spread out over a number of specific strategies, it is not possible to determine exactly what specific behaviors account for the significant differences. One possibility is that in this case high-rated and younger students use the same strategies, but in different ways and as a part of a different overall strategy. For instance, a high-rated student may briefly pay attention to a picture, but then move on to the text or title before making any predictions or inferences. This behavior would be coded as Selective Attention Picture. A younger student may also pay attention to a picture but not make any inferences or predictions either on the basis of the picture or of the text. This student's behavior would also be coded as Selective Attention Picture. This explanation, however, is only speculation, and further research will be necessary to explain this finding.

Overall, the main differences between older and younger students is that older students used more conceptual story-based strategies and more metacognitive strategies.

Differences in Learning Strategy Use Between Students of Different Languages

Language of program and kind of program were confounded in this study. The students who studied Japanese were in a partial-immersion program, while the students of French and Spanish were in a full-immersion program. This

confounding of variables must be kept in mind when considering differences of learning strategies of students of different languages.

There are only a few instances of significant differences in learning strategy use between students of French and students of Spanish. Students of Spanish used a higher proportion of decoding strategies than either students of French or students of Japanese. Spanish is the most translucent of the three languages: words are pronounced as they are written in Spanish. In French, as in English, the written language is more opaque: there are more instances where letters make different sounds depending on their context. In Japanese the use of two syllabaries and Kanji (Chinese-based characters) makes decoding the written language more difficult for beginning readers. The fact that the Spanish students used a greater proportion of decoding strategies suggests that the students relied more heavily on decoding when it most efficiently rendered accurate pronunciation.

Students of French produced a significantly larger proportion of Inferencing from Text strategies than students of Spanish and Japanese. The students of French were more fluent readers of the target language than the students of Japanese which may explain this difference. It is harder to explain the difference between students of French and Spanish. One possible explanation is that while the Spanish students could use Decoding more efficiently to access the pronunciation of words, the French students may have needed more different text-based strategies, such as Inferencing from text, since decoding was not as efficient a strategy in French as in Spanish.

The students of Japanese were less fluent in reading in L2 than the students of French and Spanish. Whether this was due to differences in the languages or differences in the programs or a combination of the two is unclear. Most of the differences between strategy use of students of Japanese and the other students may be attributed to the lower level of reading skill. Students of Japanese produced a significantly smaller proportion of Prediction strategies than students of French overall. However, there was no effect of language on Prediction from Pictures. When the stimuli were non-linguistic the students of Japanese used the same strategies as the other students, but when the stimuli were linguistic their lower level of overall language acquisition led them to use different learning strategies in Reading.

Students of Japanese produced a pattern of use of Linguistic Knowledge strategies, primarily Decoding, that was different from the other students. This effect may be due to the differences in the languages and the fact that the students of Japanese spend less time studying in the target language. In Grades 1&2 the students of Japanese used less decoding strategies than the students of other languages. This may be partly due to the fact that the rules and systems that are used in decoding Japanese are more complicated than the rules for French and Spanish and take longer to acquire. This interpretation of the results is supported by the finding that in Grades 3&4, when decoding strategy use is reduced in students of French and Spanish, decoding increases for students of Japanese to about the same level as that of the French and Spanish students in the same grades. This finding suggests that once the decoding

system was learned, the students of Japanese employed it to the same degree as the students of the other languages.

The difference in mastery of the target language between students of Japanese and students of the other languages may also account for the differences in patterns of ranges of strategy use. The high- and low-rated students of Japanese all produced about the same numbers of different strategies in Grades 1&2, however in Grades 3&4 the high-rated students produced a significantly larger range of strategies than the low-rated students. This suggests that in Grades 1&2 all the students were beginning to acquire the basic systems and rules for decoding in Japanese. Once, these basic principles were mastered to a certain level, by Grades 3&4, the more-effective learners were able to branch out and use a greater range of strategies while the less-effective learners were not able to do so. This pattern of strategy use of the Japanese students in Grades 3&4 resembles the pattern of students of French and Spanish in Grades 1&2 and further suggests that the strategy use of the students of Japanese was at least partly determined by their lower level of mastery of the target language.

The great surprise in this study of the differences in strategy use of students of different languages and in different programs is that there are so few significant differences in strategy use across these groups. There were no significant differences in strategy use found between students of different languages on the Writing Task. The implication of these findings is that the learning strategies employed by language immersion students are for the most

part the same across kinds of programs, full and partial immersion, and across languages studied.

In summary, there were very few significant differences in the learning strategies used by students of French and Spanish on the Reading Task. Students of Japanese produced some different patterns of strategy use from the other students in reading. These differences may be more linked to differences in level of L2 mastery than to differences in languages. Overall, there was a striking similarity in strategy use on the Reading Task of students in different kinds of programs and students of different languages. On the Writing Task no differences were found in learning strategy use between language groups.

IV. Learning Strategies and Self-Efficacy Questionnaire Study

Introduction

Strategies have been linked to motivation and particularly to a sense of self-efficacy leading to expectations of successful learning (Zimmerman & Pons, 1986). The development of an individual's self-efficacy, or level of confidence in successfully completing a task has been associated with effective use of learning strategies (Zimmerman, 1990). Self-efficacy is at the root of self-esteem, motivation, and self-regulation (Bandura, 1992). According to Bandura, self-efficacious learners feel confident about solving a problem because they have developed an approach to problem solving that has worked in the past. They attribute their success mainly to their own efforts and strategies, believe that their own abilities will improve as they learn more, and recognize that errors are a part of learning. Students with low self-efficacy, on the other hand, believe themselves to have inherent low ability, choose less demanding tasks on which they will make few errors, and do not try hard because they believe that any effort will reveal their own lack of ability (Bandura, 1992).

This study investigated the relationship of language learning strategies use and self-efficacy of French, Japanese and Spanish elementary immersion students. Previous and concurrent research conducted by the National Foreign Language Resource Center indicated that secondary level foreign language students show positive correlations between the amount of learning strategies use and level of self-efficacy. However, no research has investigated whether this correlation is also positive with younger students. Through two

questionnaires, The Immersion Language Learning Strategies Questionnaire and The Immersion Self-Efficacy Questionnaire, researchers were able to collect and analyze data on elementary students' reported use of strategies and self-confidence to address the research question: "Do students who show greater use of language learning strategies perceive themselves to be more effective language learners?"

Method

Subjects.

Subjects for the study were drawn from Spanish and French full-immersion programs and the Japanese partial-immersion program described above. Grades represented in this study include fourth, fifth, and sixth grade for the French and Japanese immersion schools and fourth and fifth grade for the Spanish immersion school which did not have a sixth grade at the time of data collection. Participation was voluntary by both teachers and students. Only students from whom parent permission was obtained were included in the results of the analysis. Table 5 shows the number of students for each language participating in the study.

Table 5.

Subjects participating in Learning Strategies and Self-Efficacy Questionnaire Study

Language	Grade 4	Grade 5	Grade 6
Japanese	20	12	13
French	19	27	14
Spanish	19	19	NA

Instruments and Procedure

Immersion Learning Strategies Questionnaire (ILSQ).

The ILSQ was used to collect data on the types of strategies students use and the frequency with which they use them. The format of the questionnaire was modeled on previous measures developed by the researchers for identifying high school and college level students' strategies use. However, the instrument was adapted so that it would be understandable to elementary school children. Researchers developed a scripted administration guide so that all children received the same set of instructions and had the same amount of

time (30 minutes)for completing the questionnaire. (See Appendix G for a copy of the ILSQ.)

The questionnaire reflected strategies use for each of the four modalities: reading, listening, writing, and speaking. Questionnaires were identical across languages with the exception of the Japanese instrument which, in addition to the four modalities, contained a section on learning and remembering kanji characters. A set of focal learning strategies were identified on the basis of previous interviews with immersion students as well as classroom observations conducted by the researchers. These strategies were represented on the questionnaire. Learning strategies were selected to represent the processes of planning, monitoring, problem-solving and evaluating for each modality. Table 6 gives examples of items for the reading task:

Table 6.

Example Questions on Immersion Learning Strategies Questionnaire

Process	Question
Planning	Before you read in (language), do you try to figure out what it will be about?
Monitoring	When you read in (language), do you imagine pictures in your head or imagine you are part of the story?
Problem-Solving	When you read a word you don't know, do you try to figure out its meaning by looking at the rest of the story?
Evaluating	After you read something in (language), do you think about how well you understood it?

Students responded to the questionnaire by marking whether they used a strategy almost every time, sometimes, or almost never. These response choices were represented by circles: a filled circle for almost every time, a semi-

circle for sometimes, and an empty circle for almost never. Students were first given practice items to complete such as "During a school day, do you have recess?" to ensure that all students understood how to respond to the questionnaire.

A class of fourth grade students not participating in the actual research study was chosen as a pilot test site for the ILSQ. Results were analyzed for reliability and the questionnaire was revised accordingly. In addition, the questionnaire was given to fourth, fifth, and sixth grade teachers to check for readability. The revised questionnaire was then administered to the target student population in spring 1996.

Immersion Self-Efficacy Questionnaire (ISEQ).

The ISEQ asked students to indicate their level of self-confidence for performing language tasks in the four modalities: reading, listening, writing, and speaking. The Japanese ISEQ also had an additional section on students' self-efficacy for learning kanji. For each question students were asked to indicate how sure they were that they could do the task. A sample item for reading is: "When you read in language, can you figure out what new words mean?" Response choices included "no way," " probably not," "maybe," "probably," and "definitely." This instrument is modeled on a similar questionnaire developed for use in high school and college-level classes. It was adapted to be understandable to elementary school children (e.g., responses items were changed from a Likert-type scale to word phrases). The questionnaire addressed similar language tasks as the ILSQ so that correlations could be run

between the two instruments. (See Appendix H for a copy of the ISEQ questionnaire.)

As with the ILSQ, an administration guide was developed so all students received identical directions and had the same amount of time (30 minutes) for completing the questionnaire. The instrument was prefaced with practice items such as "Can you say the alphabet backwards?" so students could become accustomed to the items and response choices. The ISEQ was pilot tested in the same way as the ILSQ with a non-participating group of fourth grade students and participating teachers reviewed the instrument. The ISEQ was revised accordingly to the pilot testing and then administered to the target sample of students in spring 1996.

Results and Discussion

The questionnaire data was collapsed across languages and then correlations were tested. Table 3 gives coefficients for correlations of interest. All correlations were significant except where marked not significant (NS).

Table 3

Correlations between Use of Learning Strategies and Self-Efficacy

	LSQ Overall	ILSQ Reading	LSQ Listening	LSQ Speaking	LSQ Writing	LSQ Kanji (Japan)
SEQ Overall	r = .42 (n=134) p = .000					r = .33 (n=40) p = .020
SEQ Reading		r = .34 (n=134) p = .000				r = .39 (n=40) p = .006
SEQ Listening			r = .30 (n=134) p = .000			NS r= .10 (n=40) p=.269
SEQ Speaking				r = .29 (n=133) p = .000		NS r= .13 (n=40) p=.216
SEQ Writing					r = .35 (n=134) p = .000	r = .45 (n=40) p = .002
SEQ Kanji (Japanese only)	r = .27 (n=40) p = .043	r = .26 (n=40) p = .050	NS r=.257 (n=40) p=.055	NS r= - .03 (n=40) p=.418	NS r= .247 (n=40) p=.062	NS r = .16 (n=40) p = .155

Results show that students who showed greater use of language learning strategies perceived themselves to be more effective language learners. Self-efficacy and strategies use had moderate positive correlations overall and for reading, listening speaking and writing.

In Japanese classrooms, self-efficacy for learning kanji was not significantly correlated with strategies for learning kanji. Correlations between kanji items and other sections showed that use of strategies for learning kanji had a positive relationship with overall self-efficacy and with self-efficacy for reading and writing. Likewise, self-efficacy for learning kanji correlated positively with overall strategies use and with use of reading strategies; correlations of kanji-self-efficacy with writing and listening strategies approached significance.

Overall, it was found that the relationship between learning strategy use and self-efficacy was the same for elementary language immersion students as it is for older language students. The results revealed that younger students, Grades 4-6, who reported greater strategy use also perceived themselves as more confident learners.

V. Teacher Interviews/Workshop Evaluations

Introduction

Researchers worked with French, Japanese, and Spanish immersion teachers to implement language learning strategies instruction in their classrooms. Workshops, materials, and observations were provided for professional support. Teachers were debriefed on the effectiveness of the teacher training and on the impact of strategies instruction on their students through workshop evaluation forms and individual interviews. This paper reports on teachers' opinions regarding strategies instruction. The following research questions are addressed:

6) What types of teacher development can support strategies instruction for language immersion classrooms?

7) Do immersion teachers believe that strategies instruction improves their students language learning?

Method

Teacher Participants

Teachers were drawn from the participating schools described above.. Participants included six French teachers and six Japanese teachers representing grades 1-6, as well as four Spanish teachers from grades 1-4. As participation was voluntary, teachers determined the extent of their involvement. Some teachers elected to participate in the workshops but not in the interviews or classroom observations.

Instruments

Workshops.

Professional development workshops for learning strategies instruction were provided to all teachers (one workshop for the Japanese and Spanish immersion programs and two for the French immersion program) during 1994 - 96. The content of these workshops/seminars was developed based on informal assessments of teachers' needs (e.g., discussions with teachers and program coordinators). In the workshops, researchers provided teachers with rationales for the importance of teaching strategies, examples of immersion students' strategies use, materials in the target language for introducing the concept of strategies to students, suggestions for integrating strategies in immersion course work, and an opportunity to develop a strategies-based lesson. Teacher evaluations of workshops provided information about critical aspects of the workshops, as well as additional professional development needs. Evaluation comments were typed and categorized to identify key points.

Teacher interviews.

In Spring 1995, teachers participated in interviews regarding the impact learning strategies instruction had on students, as well as teachers' professional development needs. The interviews, lasting from 20 to 30 minutes, were audio taped and transcribed verbatim. Responses were then categorized by question for analysis. The interview guide (See Appendix I) consisted mostly of open-ended questions.

Results

Research Question 1: What types of teacher development can support strategies instruction for language immersion classrooms?

Results from workshop evaluations.

Each workshop held for participating teachers included an evaluation component in which teachers completed evaluation materials concerning its effectiveness. Table 7 summarizes their responses.

Table 7

Immersion Teachers' Evaluations of Workshop Organized by Topics

Most useful:
Suggestions on how to explicitly teach strategies
Suggestions for identifying students' strategies
Working with a partner to integrate strategies in a lesson
Materials and Handouts
Tips on enabling students to explain their thoughts in the target language
Using practical examples in workshop
Suggestions for improving the workshop:
Reduce the number of strategies
More hands-on activities
More information on how strategies improve student's learning

Teachers indicated that the idea of teaching strategies explicitly, in other words, talking to students about how they learn and naming and defining specific learning strategies, was the most useful component of the workshop. Most of the teachers indicated that they had previously taught strategies but may have done so implicitly. They had presented and practiced materials with students using good teaching strategies to help students master the material, but they did not always inform students explicitly about strategies students could use for learning language in the classroom and on their own. The workshop enabled teachers to take the necessary steps towards explicit instruction.

Workshop teacher-participants also felt that the materials provided by the researchers were useful. The material viewed by teachers as most useful was a story of a mountain climber used to introduce the idea of strategies to younger children. Researchers had previously developed a strategies model for older students called "The Model of Strategic Comprehension and Production." In this model individual learning strategies were grouped according to the four processes: Planning, Regulate, Problem-solve, and Evaluate. Picture icons were used to represent the four processes (e.g., a daily calendar planner for Planning; a thermostat for Regulate; a tool-box for Problem-solve; and a check mark for Evaluate). While these were effective icons for older students, younger students needed a more age-appropriate learning strategies model. So researchers developed a story in which the four processes and strategies were embedded. In the story the mountain climber plans before her trip, monitors as she climbs, problem-solves when she comes to a deep wide stream, and

evaluates herself upon reaching the top of the mountain. The story was translated into French, Japanese and Spanish. Most of the immersion teachers opted to use this story in their class. For many classes, the mountain climber became a symbol for how to work through a learning task. (See Appendix J for the mountain climber story.)

Results from teacher interviews.

When asked what kinds of learning strategies professional development support was most useful, most teachers responded that the initial workshop was crucial in providing a basic understanding of strategies instruction. As one teacher said about the workshop, "When you can see how it's done by somebody else, then you can do it or you can have more ideas of how to go about doing it your own way." Although few teachers felt that a workshop alone was enough to give them adequate professional support to teach strategies, they did feel it was a necessary first step. Other teachers explained that just as students have to become aware of learning strategies, teachers also need to consciously know when and where to apply the strategies. The workshop helped teachers to figure out how to teach strategies more systematically.

The interviews illuminated specific types of professional development and aids that would assist them in becoming more confident strategies teachers. For example, they would have liked more opportunities to observe other immersion teachers' teaching strategies through video-tape or peer modeling. While researchers attempted to pair teachers to be resources to each other, often class schedules did not allow time for peer observation. Teachers would also

have liked more strategies materials in their target language that would be ready to use in the classroom. Strategies materials preparation took a lot of their time because their existing materials did not contain explicit language learning strategies explanations. Many teachers also indicated that it would be useful to have guidelines on matching strategies and grade levels. In this way, teachers would know which strategies to teach for their class and, if the instruction was organized within a school-wide curriculum, they would know which strategies students had already learned. Through such coordination strategy names could also be used consistently across grades.

Finally, the teacher interviews highlighted the importance of teacher ownership of strategies instruction. Teachers needed to be firmly convinced that the instruction was beneficial for it to be effective. As one teacher said:

> I think strategies instruction helps the students if we really believe in it. If we don't believe in it and really use it ourselves and tell them to keep using it, it's not really going to help them. But if we really believe in it, then maybe they will use it as a part of their learning also. That's what I think is the whole business. If we can't believe in it and really show them what a difference it makes, then it won't make any difference.

Thus the importance of professional development activities is not only to give teachers an understanding of how to implement strategies instruction, but to provide a convincing rationale for its effectiveness.

Research Question 2: Do immersion teachers believe that strategies instruction improves their students' language learning?

In the teacher interviews we focused on the second research question, asking French, Japanese and Spanish teachers what evidence they had that strategies instruction was helping and why it was helping. In response to these questions, teachers cited a variety of positive impacts that strategies instruction was having on their students and on their instruction. Table 8 summarizes these responses.

Table 8.

Teachers' Perceptions of Effects of Strategies Instruction

POSITIVE IMPACTS LEARNING STRATEGIES INSTRUCTION HAD ON STUDENTS:
Strategies instruction is effective.
Strategies instruction improves motivation.
Students are more active, aware, responsible as learners—higher quality thinkers.
Students have better understanding of the target language.
Students are more efficient learners.
Students independently use strategies and strategy terms.
Students are able to justify their work.

POSITIVE IMPACTS ON TEACHERS:
Learning strategies instruction makes my instruction more efficient.
Learning strategies instruction helps me teach better (general impact).
REASONS LEARNING STRATEGIES INSTRUCTION WORKS
Strategies are lifelong skills that are useful across content areas.
Strategies instruction teaches children how to think.
Strategies instruction gives students a variety of tools for learning.

All of the teachers interviewed reported that strategies instruction was effective. When asked why it was effective, teachers described concrete applications in their classes. For example, the strategies enabled students to think about how they learn and to be able to make conscious decisions about their learning techniques. Students' attitudes shifted from giving up on a difficult task to trying another strategy to solve the problem. Students were able to think about how they reached their answer, and even if their answer was not correct, students came to realize that by thinking about their approaches for learning they may be able to do it differently and better next time. The following two quotes from teachers illustrate how strategies helped students become more active and responsible learners.

"Especially when working on a computer or reading a new book, they didn't do it before, saying "I can't read this Kanji, teacher." But now they use such strategies as 'look up in your notes' or 'ask someone who knows' or 'look it up in the dictionary.'... When they don't understand what I'm saying right away, they now ask if they can discuss in groups... and so now sometimes the class proceeds really children-centered.... And when the teacher is conscious in teaching the strategies, children also become conscious of them and can start to use them the next time, so I think strategies are very important and good to teach."

"I remember a child who said, "Madame, ... I want to show my strategy to the class, but I didn't get the answer." And I said "No, no, we can't do that now." I was in such a hurry.... And the child said "But Madame, you always say that it is... the most important, to see why you have not found the right answer....And now what's happened?" It was very interesting to see that the children themselves had come to assume this responsibility for knowing how they learn. It is superb."

In addition to creating more active learners, teachers reported that strategies instruction increased students' learning independence. Students were able to name strategies and give rationales for using them. They could choose strategies appropriate for specific learning tasks. Teachers thought that

providing learning tools to students also helped their own teaching techniques as the following quote indicates:

"I believe that learning strategies are a learning tool for my students, and it gives them different ways they can learn a certain skill or concept.... I believe that it has impacted my students tremendously and my teaching as well.... I definitely think it helps students become more effective language learners because at least when I use strategies in the classroom, I ask them to express why they used that strategy, why that strategy helps them.... For example, [after a unit on spiders, then a reading about butterflies]... I asked them to go into their learning logs and compare two things about the butterflies and spiders.... Two students did a table and one of them did a Venn diagram. I stopped the lesson immediately because I thought that was wonderful! We do Venn diagrams over and over again and I think that is a wonderful strategy, and we do tables but they have never had to do it on their own and I didn't ask them to. So that is one thing I said, that is one strategy that these three students have used to do the same thing you are doing in narrative. They had to talk about why is was good to use the Venn diagram."

Although this research focused specifically on language learning strategies, it is difficult to separate content learning (math, science, etc.) from language in an immersion setting because students learn the language through the content. In the interviews, it became clear that the language learning

strategies instruction impacted not only language but other subject areas as well.

"In teaching everything, how to read, how to write, math, how to do experiment in science and how to obtain results from observation, I think these cannot be done without teaching them the strategies. Because, I think what seems to be the most important as a teacher is teaching children how to think.... More than half the class now bring up the story of Sachiko-san [the mountain climber] when solving a problem. And I told students they can use their own names instead of Sachiko after two or three times they brought up the story."

Finally, perhaps the most important reported impact of strategies instruction was on students' attitudes towards learning. Teachers indicated that strategies gave students, especially some of the weaker students, motivation to learn more. One teacher said that she could see her students reduce their affective state to take greater risks in learning.

"I think there is a big difference [with strategies instruction]... it is the attitude of the students... towards their own education.... The children who do not have strategies...think sometimes...that they cannot learn.... At the end of the year I see that the children are a little more relaxed, and they take chances in class. Because they have finished by believing that really... there is no one who knows everything.... Knowledge is exterior. Now they dare, all you need is to have the tools to learn. And when they have that attitude, you can't stop them."

Discussion

Teachers reported a wide variety of positive effects on students, and on themselves as teachers. They believed that learning strategies made them more effective as teachers and made their instruction more efficient. Teachers believed that learning strategies instruction works because it gives students a variety of lifelong tools for learning that are useful across content areas.

Based on teacher feedback, strategies instruction seems to have a positive impact in classrooms. Perhaps the most convincing rationale is that these teachers are continuing their work with language learning strategies and are continuing to develop effective strategies instruction. Through strategies instruction, these teachers are providing their students with tools that enable them to become independent learners and thinkers.

VI. Conclusions and Instructional Implications

The study ***Learning Strategies in Elementary Language Immersion Programs*** was conducted by Georgetown University's Language Research Projects from 1993 to 1996. The study investigated the learning strategies of children learning content subject matter through the medium of French, Japanese, or Spanish. The study also examined the impact of professional development activities and participating teachers' insights into the effects of learning strategies instruction.

The findings of this study provide insights into the language learning processes of elementary school students as they use a foreign language as the medium for acquiring new information and skills. The degree to which many of these young learners could describe their own thinking and learning processes seems to indicate that metacognitive awareness begins at quite an early age. Analyses of data collected through the three years of the study provide information about how children's strategies change over time, the relationship between children's use of strategies and their perceptions of efficacy as language learners, differences in strategy use across the languages studied, and immersion teachers' evaluation of the effectiveness of explicit learning strategies instruction.

The research questions addressed were the following: (1) Which learning strategies are used by more effective and less effective learners in elementary foreign language immersion programs? (2) Do these strategies change over time, and if so, how? (3) Do students who use learning strategies more frequently perceive themselves as more

effective language learners? (4) Are different learning strategies used more frequently with specific languages? (5) Are students who use learning strategies more frequently rated higher in language proficiency? (6) What types of teacher development can support strategies instruction for language immersion classrooms? (7) Do immersion teachers believe that strategies instruction improves their students' language learning?

The findings of the study are summarized for each research question In the first part of this chapter, and implications for instruction are discussed at the conclusion of the chapter.

Research Question 1: Which learning strategies are used by more effective and less effective learners in elementary foreign language immersion programs?

The source of data used to answer this question was the analysis of think-aloud interviews conducted with a sample of 72 students in Grades 1-4 in French, Japanese, and Spanish immersion programs. These students were ranked as either high or low in language learning effectiveness by their teachers. In the interviews students were asked to describe their thought processes as they engaged in reading and writing tasks in the target language. (Chapter III describes the methodology used to analyze the think-aloud interviews,)

The main finding of the analyses addressing this research question was that less effective language learners in grades 1-4 preferred using word-based or bottom-up strategies for both reading and writing tasks, while the more effective language learners used a greater proportion of meaning-based or top-down strategies for the same tasks. Another strategy used more frequently by more effective language learners for writing was

Selective Attention, or focusing on specific aspects of the text under construction. Although both more and less effective students used Substitution as a strategy during writing, the way in which they used this strategy differed. Less effective students generally substituted English for the words they could not recall in the target language, while more effective students used circumlocutions or synonyms in the target language.

Although the analysis revealed few differences in frequencies of learning strategy use between high and low rated students, the major difference between them was in the amount of decoding, which has important implications for instruction, as discussed in the second part of this chapter. Also important is the way in which a given strategy was used by each type of student, such as the use of Substitution described above. A qualitative analysis of a sample of the same subjects revealed important differences in how the strategies were actually used by more and less effective students (Chamot & El-Dinary, 1996; National Foreign Language Resource Center, 1996).

Research Question 2: Do these strategies change over time, and if so, how?

Think-aloud data from the three languages studied (French, Japanese, Spanish) were aggregated by grade level into two groups, Grades 1-2 and Grades 3-4. These two grade level groups were then used to explore differences in learning strategy use between younger (Grades 1-2) and older (Grades 3-4) language learners.

In reading, older students used a higher proportion of Monitoring, Prediction, Inferencing, and Manipulating Information strategies than younger students. On the other hand, younger students demonstrated greater use of Decoding strategies and also used

Elaboration strategies based on pictures more often than older students. This finding is congruent with differences in strategy use by more and less effective language learners, in that both younger and less effective language learners appear to rely on word-based rather than meaning-based text processing strategies.

In writing, older students used more Planning strategies, especially organizational and self-management strategies, while younger students used more Selective Attention strategies in writing. Again, this finding seems to indicate that older students were more concerned with planning how to communicate a message, while younger students tended to focus on the details of their writing.

Research Question 3: Do students who use learning strategies more frequently perceive themselves as more effective language learners?

Information related to this question was acquired through the administration of two questionnaires: *Immersion Learning Strategies Questionnaire (ILSQ)* and *Immersion Self-Efficacy Questionnaire (ISEQ)*. These questionnaires were administered to a sample of 143 students in Grades 4-6 in the same French, Japanese, and Spanish elementary immersion programs. Items included in the questionnaires addressed all language modalities (listening, speaking, reading, writing). (See Chapter IV for a description of the methods used to analyze the questionnaires.)

The results of correlations between reported use of learning strategies and degree of self-efficacy are reported across the three languages. They indicated that students who used a greater number of learning strategies also felt more confident in their language

learning abilities. This finding parallels similar results with secondary school and college foreign language students in which differences in frequency of strategies use and level of self-efficacy were also positively correlated (Chamot, Barnhardt, El-Dinary, Carbonaro, & Robbins, 1993; Chamot, Robbins, & El-Dinary, 1993).

Although causal relationships cannot be established through correlational analyses, it does seem that there is a strong link between using learning strategies and feeling confident about succeeding on language tasks for elementary language students as well as for older students.

Research Question 4: Are different learning strategies used more frequently with specific languages?

Data related to this question were obtained primarily through the think-aloud interviews. In addition, one difference between languages was revealed in the correlations between the two questionnaires used to identify use of learning strategies and level of self-efficacy.

Some effects of language were found for the reading tasks, but none were found for the writing task. As could be expected from linguistic differences and similarities between the three languages, immersion students in French and Spanish resembled each other in learning strategies used for reading more than they resembled students of Japanese.

One of the few differences in learning strategies use between students of Spanish and students of French was that Spanish students used significantly more word decoding

strategies. Given the regularity of phoneme-grapheme correspondences in Spanish, this finding may indicate that decoding is simply a more effective strategy for Spanish reading than it is for French (or English). A second difference between reading strategies in Spanish and French was that French students used the strategy Inferencing much more frequently. Again, this finding may be language-based, in that, like English, French spelling does not always provide one-to-one correspondences with pronunciation. This may encourage young readers to use more contextual clues to understand a text than is necessary in a more phonetically-based language such as Spanish.

While students of Japanese showed different patterns of strategies used for reading, they did employ the same strategies. Unlike the French and Spanish students, the Japanese students were in a partial immersion program, receiving instruction in Japanese for only half of the day. In addition, the subjects taught in Japanese were mathematics, science, and health, so that instruction in reading and writing focused on the literacy needs of these subjects, while in the French and Spanish programs, extensive instructional time was devoted to reading and language arts.

These program differences and the fact that students of Japanese were learning the three Japanese writing systems probably accounts for differences in patterns of strategies used for reading. In Grades 1-2, neither high-rated nor low-rated students used many decoding strategies, but by Grades 3-4, the high-rated students were using a significantly greater number of decoding strategies than the low-rated students. In other words, students in Japanese immersion classrooms were taking longer to sort out the relationships between written characters and their pronunciation than the students in

French and Spanish programs who did not have to learn a writing system different from their native language.

Another unique feature of strategies use of students of Japanese was revealed in the questionnaires comparing learning strategies to self-efficacy. These questionnaires had a special section for students of Japanese in which students reported on their strategies for learning *kanji*, the Chinese-based Japanese characters which are semantic rather than phonemic in structure. Strategies for learning *kanji* were not significantly correlated with students' self-efficacy for learning *kanji*, but were positively related to self-efficacy for learning Japanese in general. That is, students who reported a greater use of *kanji*-learning strategies believed themselves to be better learners of Japanese, but this perception did not include any confidence in specifically learning *kanji*.

Research Question 5: Are students who use learning strategies more frequently rated higher in language proficiency?

Quantitative data from the think-aloud interviews were used to address this question. As discussed in Chapter III, strategies revealed in the think-aloud transcripts were coded and proportions of frequencies were calculated. While this approach was useful in describing patterns of learning strategy use between high-rated and low-rated students, between younger and older students, and between languages, it was not designed to reveal qualitative differences in strategy use. (For qualitative analyses of the same data, see Chamot & El-Dinary, 1996; National Foreign Language Resource Center, 1996).

The results of the quantitative analysis found few significant differences in frequency or range of learning strategy use between more and less effective language learners. One of the differences found between the two groups was that less effective students (even in the older group) relied much more extensively on decoding for reading and writing. More effective learners used comprehension-based strategies such as Monitoring and Inferencing as well as decoding strategies. This finding indicates greater flexibility in using both top-down and bottom-up strategies by more effective language learners, paralleling similar differences between better and less able young readers in native English language contexts (see, for example, Pressley, El-Dinary, & Brown, 1992).

More effective first and second graders used a greater variety of learning strategies than their less effective peers, but both more and less effective third and fourth graders were similar in their range and frequency of strategies. This may indicate that less effective younger students had successfully learned to use more and more varied strategies by grades three and four, possibly as a result of learning strategies instruction provided by participating teachers.

Research Question 6: What types of teacher development can support strategies instruction for language immersion classrooms?

Teacher workshop evaluations and interviews were used as data sources to answer this question. (See Chapter V for a description of the methods and procedures.)

Evaluations of workshops and individual interviews with French, Japanese, and Spanish immersion teachers provided information about the types of professional

development most needed by teachers for integrating learning strategies instruction into their curricula.

Participating teachers indicated that an initial workshop providing an overview of language learning strategies and general information about learning strategies instruction was essential. However, teachers indicated that follow-up workshops are also needed. They appreciated the practical examples provided in the workshops, but indicated that additional hands-on activities would be helpful. They also asked for more information on how learning strategies can improve student learning. The materials and handouts providing teaching guidelines and tips were useful to teachers, but they would have liked more materials in the language they were teaching. Teachers also believed that opportunities to observe learning strategies instruction by other immersion teachers would be beneficial.

Research Question 7: Do immersion teachers believe that strategies instruction improves their students' language learning?

The data sources used to answer this question were interviews with French, Japanese, and Spanish immersion teachers. Teachers who had taught learning strategies to their students were asked to provide specific examples of how the effects of their instruction. (See Chapter V for a description of the methods used for collecting and analyzing these data and Appendix I for the Teacher Interview Guides.)

All teachers stated that learning strategies instruction was effective for their students. Teachers found that the learning strategies instruction created a context in which

students could reflect on the learning process and become more independent in their approach to learning. Students were able to discuss specific strategies they used and explain how and why the strategies were beneficial. An important conclusion of the teachers interviewed was the effect of learning strategies instruction on students' attitudes and motivation. Weaker students in particular became more self-confident and motivated as they learned to use learning strategies.

Teachers also reported that providing learning strategies instruction helped make their teaching more effective and that they planned to continue to integrate learning strategies into their ongoing lesson plans.

Implications for Instruction

The results of this study point to a number of potential applications to foreign language teaching in general, and specifically to elementary language immersion programs.

The response of participating teachers to learning strategies instruction indicates that this type of instruction can make a useful contribution to the language curriculum and to teaching methodology. Some students may enter the language classroom using effective learning strategies, but many may not yet know how to use strategies appropriately. It is important for teachers to find out which strategies students are already using in order to plan appropriate strategies instruction. Students who are already using appropriate learning strategies can become useful resources to their peers in explaining exactly how to use particular strategies. Students who know how and when to apply

learning strategies can benefit from thinking about how and when they use strategies and what new strategies might be useful.

Learning strategies should be integrated into the curriculum, not taught in the abstract. Teachers should explicitly teach strategies and explicitly link them to specific language learning tasks. Teaching strategies explicitly requires that the teacher name, define, model each strategy and explain why and when it is effective. Explicit strategy teaching also requires that teachers prompt students to think about, talk about, and use appropriate strategies while learning.

This study has provided guidelines for possible strategies to include in instruction. For example, the less effective and younger language learners relied far more on decoding strategies in reading and writing than their peers. In general, the strategies used by more effective and older students could be taught to less effective and younger students. To help students rely less on decoding, teachers should teach more comprehension-based strategies as part of reading and writing instruction. In reading, teachers need to strengthen students' ability to use selective attention to important aspects of the text, to make inferences about probable meaning based on context clues and their own background knowledge, and to predict what information might follow in the text. In writing, students need to become aware of the importance of planning what to write about and to focus on communicating their ideas rather than being concerned with spelling and other mechanics during the initial draft.

Many of the students in this study used only a small number of metacognitive strategies. The incorporation of metacognitive strategy instruction could help students

become more independent learners by providing them with a framework for approaching any type of task. Such a metacognitive framework consists of planning before embarking on a task, monitoring the progress of the task while it is taking place, solving problems that occur by selecting appropriate strategies, and evaluating the success of the task once it has been completed. This type of metacognitive framework was provided to immersion teachers as a story about a mountain climber (see Appendix J). Teachers who used or adapted the story as a way of introducing learning strategies and self-reflection to their students reported that it worked well in setting up a conceptual framwork which was used to guide learning strategies instruction.

An important finding of this study was the positive relationship between students' use of learning strategies and their feelings of self-efficacy, or confidence in their own language learning abilities. Teachers also reported that learning strategies instruction was motivating to their students. The affective component of learning strategies appears quite positive, providing yet another reason for teaching the strategies.

When learning strategy instruction is integrated into the language curriculum, it should also become part of the assessment process. Students should be assessed and also assess themselves on their use of strategies. The purpose of this is to explicitly link difficulties and successes in foreign language learning to the use of learning strategies. Although students should never be penalized for using an inappropriate strategy, they must become aware of the fact that their use of strategies greatly impacts their language learning. The process of evaluation should also include self-reflection by students on how they would approach a similar task in the future. This type of evaluation requires careful

planning by the teacher and student involvement in assessment from the beginning.

Teachers in this study found that learning strategies instruction was well worth the time and effort involved because of the benefits to students in increased responsibility, involvement, metacognitive awareness, and motivation. These benefits can also extend to teachers' own growth and development as reflective practitioners.

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LEARNING STRATEGIES IN ELEMENTARY

IMMERSION PROGRAMS

FINAL REPORT

APPENDIX

Reporting Period
FY 1993-1996

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Coding Reference/Index

(Numbers at left indicate "level" of each category in the hierarchy.)

1 *METACOGNITIVE STRATEGIES*

2 PLAN

3 **Prev**iew

4 **Prev genre/org**anizing principle

4 **Prev main** idea/topic

3 **Org**anizational planning

4 **Sec**tions

4 **Aid** organizational aid (web, list; unprompted only)

3 **Self-man**agement

4 **know** ☛ (- chooses topic knows little about)

5 **know L2** selects topic because knows L2

5 **know topic /interest**

4 **DA** [Directed Attention]

4 **RA** read aloud/whisper for a purpose

4 **Self-cue**

4 **Repeat pattern**

4 **Avoid** what I don't know how to say; change topic

4 **Rh** Rehearsal ("lip"/think words before saying)

[METACOGNITIVE & COGN.; count as metacog.]

2 SA SELECTIVE ATTENTION

3 SAknwd (to known words)

3 **SAkey** (important words)

3 **SAtitle**

3 **SApic**ture

3 **SA#** (numeral)

3 **SAling** linguistic features/word endings/ specific part of speech/ grammatical correctness

3 **SApron**unciation

3 **Skip**

4 **Skip LB**

4 **Skip NI**

3 **Reread** [no disagreement w/ Look back]

4 **Look back**

2 MONITOR

3 **Strat +/-** [Monitor current strategy use]

3 **Msense** [note whether what is being read/said/written makes sense]

4 **Msense+** [Makes sense; I understand.]

4 **Msense-** [Doesn't make sense.]

3 **Aud mon** auditory monitoring [sounds right/wrong]

3 **Ver**ify Confirm/change an inference, prediction, cognate meaning [revising an inference by making a new one codes as both Ver and I]

3 **SC** Self-correct errors/perceived errors

3 **SQ/QVer** [self-questioning/ hypothesizing answer & asking interviewer if correct]

1 *COGNITIVE STRATEGIES*

2 CONNECT W/ BACKGROUND KNOWLEDGE TO MAKE MEANING

3 ☞ Inference [I- if incorrect; count I- separately]
- **4 Ititle**
- **4 Ipic**
- **4 I#**
- **4 Iknwds**
- **4 Itext**
- **4 Ilit/med**
- **4 Iwrld**

3 Predict (based on:)
- **4 Pred** based on **title**
- **4 Pred pic**ture
- **4 Pred #** (numeral)
- **4 Pred knwds** (known words)
- **4 Pred text** (context)
- **4 Pred lit/med** (literature/media)
- **4 Pred wrld** (general world knowledge)

3 ☞Elaborate [elab- if irrelevant; count separately]
- **4 Elab pers** [personal experience, judgment, emotional response to text]
- **4 Elab txt** [connection between parts of text]
- **4 Elab pic** [talk about pictures]
- **4 Elab class** [talk about specific class activity]
- **4 Elab wrld** [observations ab. world situations]
- **4 Elab lit/med** [connect to literary/media kn.]
- **4 Vispic** [image: object/scene]
- **4 Role** [imagining self in story]

2 USE SPECIFIC LANGUAGE KNOWLEDGE TO SOLVE PROBLEMS

3 L2 knowledge
- **4 Deduct**ion
- **4 Dec**oding [each word S tries to decode]
  - **5 Dec-mn** [mental decoding]
  - **5 DecChar**acter [recognition/pronunciation]
- **4 Semantic** awareness [alternative meanings; connotations]
- **4 Sub**stitute

3 L1-L2 knowledge
- **4 Cog**nates
- **4 Borrow** modify/accent L1 word to fit L2; make up word

4 Mix go back and forth from L2 to L1 words [imm writing; HS speaking]

2 MANIPULATE INFORMATION

3 Retell

3 Summarize

3 Translate (- if clearly incorrect)
- **4 Metatrans**lation

2 RESOURCE [computer, text, own notes, video/audio, task info]

3 Dictionary

3 Chart [e.g., hiragana]

3 QI Question for information that is unknown or for general help--spelling, word meaning, translation

2 RECALL STRATEGIES

3 Sequence [think through memorized sequence]

3 Association -- Sound associations

3 Brainstorm L2 Vocab (writing/speaking)

3 Viswd/char visualize word or character

3 Aud recall hear words/say aloud to retrieve meaning

CODING SCHEME REFINED IN MEETINGS DURING SUMMER 1995
COLLAPSED ACROSS IMMERSION AND HIGH SCHOOL
COLLAPSED ACROSS MODALITIES

Researcher strategy name/Def	Examples: High School in Palatino font; Immersion in Helvetica font
METACOGNITIVE STRATEGIES	
PLAN	
Preview (but does not occur only before reading) Looking for large meaning or overall text structure. Includes skimming, scanning (see msense if explicit statement of getting main idea). Often double-coded with SA, I, Pred. **Prev genre/organizing** principle **Prev main** idea/topic Trying to get the main idea (Advance Organization) holistic (MC)	**Prev main** Read through once (e.g., to get the gist before going back in more detail): Usually I just skim through it very quickly...if I can just kind of see if it has lots of dialogue or if it's mostly just writing uh narrative.//I read through it and try and see what happens and then I go back...The first time I read, I just read through and try to get the idea.// Sometimes I just try to get basically what's happening and then I go into detail afterwards. **Prev genre/org** I can just kind of see if it has lots of dialogue or if it's mostly just uh just writing uh narrative. See once again this is just description.//And a lot of times like the stories are the same like the animals talk and I'm not confused by that anymore...And they all have their general themes. So like now I know that this is one of their little mystery ones like was he Senor Fuentes.

Organizational planning
Sections
Generating content in sections [note that instructions say to write a good beginning, middle, and end--Don't code where prompted this way.]
Aid
Using a written aid, such as a web or list, without being prompted to do so.
	S: When I'm writing one down, I usually think about saying what I'm trying to think of a little bit, think of what else I'm going to say afterwards. Trying to figure out words, trying to remember (xxx).//
	I: (What are you thinking about now?)...
	S:(What ideas you can use, what can you use to organize my ideas.)
	Sections
	I: (Do you have everything planned to the end, or do you go along thinking about it little by little?) S: (No, I have the beginning.)//
	I: (You are writing so quickly and well. Now you have stopped. This is what you had in your mind, and are you going to continue with something new or do you have to think awhile?)
	S: (I need to write, and ...the beginning and to think about what is going to happen in the middle, and in the middle I think about what is going to happen in the end.)//
	S: (Yes...because I can write a word and think about what I am going to write later. I like, do one whole part at a time.)
	I: (Like all the first part.) S: Sí I: (The first part, then the middle, and then the final part.) S: Sí//
	S: ...then I was, by the time I was already to write the next sentence...I was thinking of like, um, next sentence, too, like what I was gonna write for the next sentence, and I thought of it, and I kept writing that, and that.

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Self-management
AUC Def: Deciding how one will accomplish task and arranging conditions for doing so.
Includes using words from other speaker's input
Use what I **know** (-)
Talk about topic I know a lot about; topic currently studying in class [formerly topic selection]
- [add a negative sign if chooses topic even though doesn't know vocab/topic]
know L2
Choose topic because know the L2 vocabulary for it.
know topic/interest
Choose topic because know lots about the topic or interested in the topic
DA Directed attention
Pay attention. Focus on the task. Avoid distractions.
RA read aloud/whisper–must give reason
Self-cue
[Urging oneself to think of more ideas (generate content) or reminding oneslef of next step to take]
Repeat Pattern
Repeats a previously used construction
Avoid
Actively avoid what I don't know how to say; change the topic; leave out a section part I don't know how to say [contrast skip–individual words]
(M) [executive function]
	Self-man Choose broad topic so I could pick a lot of aspects of it.
	know topic"To talk about something I know a lot about
	knowtopic; knowL2 - S: I just chose that topic, pretty much my favorite. I don't know a lot of words for that topic, for sports and stuff, that's why I mentioned it.//
	Know L2 or brainstorm??
	S: I know what I can do–neko (cat).//
	S: I was thinking while I was writing sansuu (math), I was trying to think I knew we had learn um sansuu in kanji.... But I forgot what it was, so I was like , hmmm, should I , and then, since I put that down, so I was thinking back and making try I was supposed to put that in kanji, I don't know kanji, um...um...um...katakana.
	"I thought I would remember the words to describe them."
	[Seems to include (extra?) information because s/he knows how to say it.]:
	"I know what ...means city–what city I live in and state–Maryland."
	Use mainly cognates–"Like (sestra)–sister is similar to the English version of the word. And it's easier to remember than other words. So I use mostly those words."
	Repeat pattern
	S: Kubi ka, kasa ri, kubi-kasari (necklaces) Indians no kubikasari wa (Indians' necklaces are) beautiful or pretty. I: You wanna write that. S: I don't know how to spell pretty. I: Un. Kirei. (Yes. It's kirei.) S: kirei. Ah (writes) ...S: I was going to write, Indians no ha, ha. I: Hane ne. (Feather, isn't it?) S: Hane. Hane wa kirei. (Feathers. Feathers are pretty.)
	Avoid
	"I couldn't remember any of the words to go with it. I could also talk about my family because I remember more words from that."
	"I can't describe any of the other things. And I was absent for an entire adjective thing."//
	RA
	"It helps me. I hear it...instead of inside my mind, I hear it talking out loud."
	Self-cue
	S: (**I am thinking what else, what else?**) I: (What else do you want to write?) S: Sí : (You weren't just looking for a word? You are thinking about what you want to write about?) S: (How the middle and end are going to be.)//
	[Student has just generated a rich description of the picture in English.]
	S: I'm thinking how to write. I don't know how to start it. ...I can't start. How am I supposed to start? (silent)//
	I: do you think of anything after you finish writing?
	S: Um, I think about, if I can write any more or things that I left out, and.. what I'm gonna do when I'm gonna finished

Rh Rehearsal Lip the words or think the words in my head before speaking Preparation for speaking	**Rh** "Sometimes as you think about it just like lip it so that it's sort of like you're pronouncing it, and all you have to do is put sound in it to make it to pronounce it." "I piece them together in a sentence before speaking whenever I can."

MONITOR Seeing how well you are making meaning; evaluating own performance	
Strat +/- Monitor current strategy use/approach + going well; strats work - not working; strats don't help me (M)	"But right now it's not going very well." "It has the same ending, but that doesn't help me at all." "...she wrote all the words on the board and I'm trying to picture them. I can't picture them, though." "Which might not be a good way of doing it"
M-sense +/- Comments about whether S understands; whether what is read/said makes sense +It makes sense; I get the main idea; I understand -It doesn't make sense [was PI] Something's confusing, or don't understand what whole thing means.	**Msense** As I'm understanding more information about the people he's talking about...//Oh, okay...//S: I was thinking if I say it, would it make sense? I come up with some words; I say this gonna make sense?// I usually have to read it 2 or 3 times to get the gist of what's happening. I might not know it all, but I get the main idea.// Sometimes when I'm reading Japanese, I'll just go over a page a little bit and so that, make sure understand the words. **Msense-** -"I don't know what that means, so I can't make sense out of the sentence."//"...But that's about all I got out of it."//'-"Okay, I'm done. Ask me what it means, I won't tell you because I don't know."//-I'm pretty confused at this point.// I: (What happened in the middle?) TOO CUED--do not count [From captions in writing task picture] S: (?) ... and this isn't i, and I don't care if there aren't right. I've got these ones mixed up. You know it's this one. I: Un. It's the same ne? (Ok?) Those two are the same.// S: Well, when I read in Japanese, sometimes I can't really tell when it's the word. I just kinda say the letter by letter and keep going. I can get ojiisan, 'cause I know that word. Most of the words, I know that a lot of times I just cannot say it by letters and it doesn't make a word.
Aud mon auditory monitoring Using ear for language to make decisions; what sounds right.	
Ver Verify EVALUATE IN MODEL [In coding, related to I/Pred, but gets confused w/ SC] [Includes adjusting interpretation when new information is encountered. **Revising an inference/pred by making a new one counts as both I (or pred) and ver.**] **If you see a ver, check to make sure the original inference, prediction... is coded.** (M)	"I was thinking of different 'p' words I know and seeing if it was that but it's not." "So maybe it's not robots because I don't think they'd be doing the same thing with robots.... [ver] "He is six) Is that how old he is?[SQ] It's a number (sixty). He's sixty. But that's not his age; I know the word for age...Oh (year). Yes, that's how old he is." (see context) "Oh! And it says it right up here that I completely missed at the top in bold." I did change my mind about that becasue it sees like the story is just beginning.... If they captured the criminal the story would be over. So I'm thinking "encontrar" is they're looking for, and now I know for a fact that it is to look for. S: ...I"m trying to think about that picture. What is he doing? I: Un (Yes.) S: Like put the umbrella? It looks like he's trying to not anybody take it.... Oh, well if you get the end, itsumo kasa wo motte (always carry the umbrella), like he took his umbrella with him somewhere.

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SC self-correction of errors or perceived errors, or corrections that make meaning more fluent (e.g., when translating) Student changes mind, rephrases something (esp. when translating). [Changing an inference is I/ver, not SC] Does not necessarily mean student moves from a wrong to right meaning, pronunciation, grammar; just that student tries it a different way, is not satisfied with first attempt. Includes making meaning, grappling with translation, appropriate grammar, **(not when sounding out words for reading, unless changes tense or meaning)** (pronunciation for speaking; in reading, pronunciation to figure out word coupled w/ decode only when they change their pronunciation). **Writing--include corrections when orally telling story that they will write.** (M)	Like "Cruce la plaza" is like he I crossed the plaza.// I thought that meant forward, obviously not, the front of [SC] the History...Natural History Museum [SC] I: ...Why did you change your mind? S: It wasn't forward because it wouldn't make sense [I] and frente is kind of like front [Icog] and it could have two dual meanings [metatrans].// I note or take notice of someone who is watching me.// At the end I stopped or I was in front of the Natural History Museum.//<br ~~Finally or something he encountered~~ [nothing--would have to come up with alternative]//~~She, he, the person~~ [S just acknowledges could be any of these; no gender info in text]// [READING] tiene tenía [Change to 1st person--correct]// Como dos, todos los días [like two, every day]// S: [reading story] Había una vez un pequeña niña que me gusta ir a la playa y todas las días caminar...Oops! (Once upon a time there was a little girl that likes to go to the beach and walk every day....Oops!) I: ¿Qué paso? (What happened?) S: Necisita poner "caminas". Caminas hasta las 1:00AM a las 12:30. Lueogo oí su madre, "Oh, es tienpo para el almuerzo." "Oh, mi nombre es Laura Fernández. Adiós." (?[It needs to be "Caminas"?] She walks from 1:00am to 12:30. Later she heard her mother, "Oh it is time for lunch. Oh, my name is Laura Fernández. Goodbye.")// S: (The word proximo has an o.) (Changed to procsimo).// I:(Why did you erase that?) S: ...not right. [Need more info on what was written, and what was erased.]//[Hypothetical--may reflect more awareness of self as learner:] S: ...But like a lot of time what I'm writing in Japanese, like (xxx) I don't even know if I'm (xxx). I just keep going and then, sometimes like (xxx) just a bunch of letters, I have to erase it and fix it. At other times, like it turns into a sentence. And so I turn that in when (xxx).// [too cued--doesn't count] I: (... It is pequeña. Pequeño, pequená, o pequeño? [CUE] S: Pequeña. I: (Yes, because it's a girl. You corrected yourself, very good.) Pequeña.
SQ/QVer Self-questioning / Questionning for Verification (Puzzle over something to make sense of it--working it out) QVer--Student has idea of answer and asks interviewer if it's right. (Does this mean, ____? ____, right?) [Because of interactive nature of think-aloud, hard to tell if student is self-questioning or asking interviewer to verfy information.] <u>Does not include question intonation, unless interviewer responds as if it's a question or recalls what student was doing.</u> **<u>Count only if clear</u>** (M)	"(He is six) Is that how old he is? It's a number (sixty). He's sixty. But that's not his age; I know the word for age...Oh (year). Yes, that's how old he is." What the hell?...Is this like...?// S: SA...SA..What's SA (Japanese character)? (Writes silently) S: Murasaki (purple).// S: ...And, I don't know what that word means. (xxx) kuro (black) was black. I: Un. S: He was all dressed in black?// S: Ojisan wa tottemo ri... po pana, pa? I: Un. (Yes.) S: Po? I: Pa. S: Pa. **Qver** ...(young) Is that 'young'?" I: Uh huh. I: Do you know this word? S: Is that an umbrella?//

SA SELECTIVE ATTENTION Up-front or on-line focus on something--student must explicitly say "I'm looking for/at..." Also includes deciding whether or not something is important (see skip subcategory). Can be PLAN or REGULATE (or PROBLEM-SOLVE if include skip/lookbk) **SAknwd** (words I know) [Double code when occurs w/ Iknwd] **SAkey** (important words; headings; bolded words) Sometimes S says key & means known. If S clarifies, then code as know or key. If no clarification, just code as SA. **SAtitle** **SApic** picture **SA#** (numeral) **SAling** Specific linguistic aspect--endings, verbs, nouns, particles; grammatical correctness (includes former SAgram) *Note if Underlining* **SApron** Search memory for correct pronunciation. (MC) [planful; also acts on info--searching] [Selective attention is continued with skip categories (see next row).]	I: "I notice you're underlining words." **SAknwd** (words I know) "I'm looking for words I recognize and trying to figure out what the other ones mean in relation to the words [I know]."[SA/infe rence often together.]// "[Looking for] something easy to read."// I'm like picking out the key words that I do know... ~~I: Pick one and read it. S: Casino I: Why'd you pick that one? S: Because you make money off them.~~ **SAkey** (important words) Checking for key words like the subjects and verbs. I just sort of look at the verb itself and get the meaning. "I'm looking for key words of relatives now because I know it's about a family type thing."[SA&prediction]// S: I'm looking for key words to pick up. I: What are key words? S: Like Latinoamerica that's pretty obvious. La problematica es diferente; that's pretty much telling you what is going to happen. What they're going to develop. [Itxtstr.] "I want to know what that word is." **SAtitle** S: (Yes, and I look at the title.)//S: (And if there's a title I look at that.) **SAgram** S: Trying to think of other things to say. I: Ok, other things to say. Are you looking for something specific? What exactly are you looking for? S: Some adjectives.// S: How to put it together. I: How to put what together? S: Trying to use the right word, grammar, and make sure it makes sense ... I was trying to make sure that I conjugate the verbs right. **SApron** "To think about how to pronounce that word."// I: Why are your eyes closed so tightly? S: I cannot pronounce that word. [S: To learn how to speak more this way, a way that I could um, learn more. And how to pronounce some of the words better.]

[These are subcategories of Selective Attention]
Skip/Ignore/Read on
Explicitly stating that I skipped something or I pay less attention to something. Also includes substituting filler word, like "something" or "blank" in mid-translation–but must move on, can't be stuck on it. (Does not include just researcher noting that student skips a word).
SkipLB (look back)
Might make sense later
(Implies inference later on)
Plans to come back later
Skip NI Not important; related to selective attention.
Reread/Lookback
Look back = Go back to a previously read section, to look for information that will help with current problem
[Look back in text to figure out/reread for specific information]
Reread
Rereading a sentence or whole text, not just individual words
Includes multiple readings
Try to read the problematic section again (i.e., for general comprehension).
(e.g., after skimming)
[Reread does not include looking back for specific information; if difference between look back and reread cannot be determined, code as reread and do not count as disagreement.]
(compare ver)
	Skip
	And then if it doesn't make sense, I just pretend I never read it.//I'll keep reading... //~~...Something a point of view...a very particular point of view...after or a particular point of view~~ (Inserts "something," but perseverates on figuring it out.)//S: ...and then I went on to see if I could figure it out...//
	I: What do you do if you come across the words that you don't know? S: I skip them.//
	SkipLB "I'll have to come back to that."//"I just go along because it might fill in the holes later on."//I:So what do you do when you don't know the words?//S: I skip. I just go over it and then I try to go back if I find something that I understand and see if it can do anything.//If there's a whole sentence I don't understand, I read the rest of the paragraph [skip/read on] and I go back and see what it could mean.// I just go over it and then I try to go back if I find something that I understand and see if it can do anything. //
	I:(OK, then, what did you do when you didn't understand?)
	S: (I read all, and then I (still) don't understand, I search later.)
	I: (Yes. Okay, I see. Then, you skip for the moment?) S:(Yes.)
	SkipNI See once again, you don't have to know that word.//It's not really important for me to read the conjugation.//"...But at least in class that should get me by"//"His name is Andrei something. I don't think I need to know that. It's just his name."//"I was thinking I don't need to describe three characteristics about the hair."
	Look back
	S: If I really need that, then I go back to it and think about it.
	Reread
	I'm going over the paragraph again and again.// I usually have to read it 2 or 3 times to get the gist of what's happening. I'd like read the whole once then read it again// Like when I read it, then I have to go back over it.//
	I: Can you tell me what you understood so far?
	S: Um, no... oh, no...Can I go back over and read that?//
	S: I tried to, I went back over a couple of times and then I went on to see if I could figure it out, 'cause usually if you read this over, you can figure out.// S: [The teachers] used to like split up the groups and used to like help us reading if we mess something up. They like us to go back and try it again, and tell us to read on our own and then come back, and then do it till we had it right.//
	I: (When you don't know a word or don't remember exactly what it means, you can tell it to me in English if you want. What do you do?) S: Leo la oración otra vez (I read the sentence again.)//
	I: (Yes. And what happened to the birds?)
	(pause) I: (And you are reading it again. That's fine. It is a good strategy.) [Good for instruction, but too much feedback for think-aloud data collection? Was this CUED or just describing what student is doing (can't be heard on tape).]

COGNITIVE STRATEGIES

MAKE CONNECTIONS WITH BACKGROUND KNOWLEDGE TO MAKE MEANING

Inference
Pulling together elements not stated in text. Guessing based on some information; not just wild guessing.
[Problem-solve in Model]
[use background knowledge to develop comprehension]
If we simply can't distinguish what kind of inferencing, just put I. Revising an inference by making a new inference counts as I and ver.

☞ **- Incorrect Inference**:
Negative sign (-) after strategy code (e.g., Ipic-) notes when inference is clearly incorrect based on text.

Ititle Infer based on title
Ipic based on picture
[In narrative, helpful to note if student seems to guess based only on pictures or on picture in combination with text.]
I# (text-specific)
Iknwds
Take words I recognize in the text & try to make sense w/ those I don't know; if using strategy (not just describing it), must indicate which words the inference is based on. [Double code when occurs with SAknwd]
Itext context clues and text-based inferences from other parts of the same text
Ilit/med inference based on literary knowledge; knowledge from media (TV, movie, song...)
Iwrld
World knowledge about topic/content, as well as logic, common sense [includes what we formerly called Itop].
[former Iling/Itxtstruc are now deduct]
(C)

I I'm not sure what "los belgas" is but that might be the people in Suiza; that's what I'm extracting from this.// I don't know but I guess I would assume fast from the context.//I think some big thing that he had to have chocolate or something. I guess he played an important role in chocolate and the history of humans//Maybe it was him but he was worried so he said he was someone else.// So obviously it means like he's going down the stairs fast cause he's scared.//I guess I figure out how it could fit into the context of the story.//~~Somebody's watching this guy~~[stated in text]

Iknwds "It's introducing somebody else I think... It looks like...well (is called) is 'name' I think and it looks like a name--Anna and whatever that last name is." "The words I recognize, try to make sense with those I don't know. It's like I recognize Moscow, so I figure it's either telling something about Moscow or something like that." "I was thinking of different 'p' words I know and seeing if it was that but it's not."[inference or predict/validate?]//Because the rest of the sentence is ... so it sounds like suddenly...

I text S: ... itsumo kasa wo motte (always carry the umbrella), like he took his umbrella with him somewhere. I: How did you figure out? S: Itsumo (always) means a lot doesn't it?...And then kasa (umbrella), I know that's umbrella, wo motte (carry), that means like bring, and then dakakemashita (went out), I don't know what that means, but sounds like, if you put the sentence together, and just think about it, sound like, he's taken this umbrella a lot.// S: Rippana (fine) I don't know what that word means. Kasa wo motte imashita (had an umbrella). Maybe he takes it to like a store or something? I don't know rippana. I: Why did you think that? S: Um...I don't know but maybe he was like, they are telling about how many, like the grandfather like loves his umbrella so much and takes it everywhere or something.// I don't know what that word means. (xxx) kuro was black. I: Un. S: He was all dressed in black? [also SO/SV?]//

Ipic "This one's by the beach. It's got big water here, sand, palm trees..." I: "You're looking at the pictures." "That's how I learn. Look at pictures. S: ... And about the story and the picture at the top. That's what I was thinking about.// S: (The man wears black clothes, and, although it doesn't say about the black clothes, but I saw it in the picture.)// S: ...I"m trying to think about that picture. What is he doing?... Like put the umbrella? It looks like he's trying to not anybody take it.

I# "It's got the area code. It's got a bunch of numbers. It's got 3 in the first and 4 in the last...you know that's a telephone number.

Ilit/med "...that the gods aren't always perfect or something like that. Or, maybe it's like the movie, The Gods Must Be Crazy, or something like that." (SB-C S4 HS). // "I think what all, what might be wrong with the gods, like they didn't get rain and a crop. Because the stories are always the same thing, you know, kinda like that." I: Stories in Spanish? S: Yeah (SB-C S4 HS)

Iwrld S: (I knew it but when the alarm clock says ring ring, that says that, because the alarm clock rings ring ring in the morning)

Pred Predict
PLANNING IN MODEL
What's next? What kinds of information am I likely to get later? [Distinction between inference & prediction--inference as educated guess about meaning; prediction as educated guess about information that will follow (after predicting, student would continue reading or looking for meaning, ideally checking if prediction is correct).]
[Try to code separately, but if disagreement is between I/pred, just count as I (agreement)]
[Actually using information to make prediction; not just gathering info that will help do so--see preview.]
[See I/SA for descriptions of the following subcategories]
Pred title
Pred pic (picture)
Pred # (numeral)
Pred knwds (known words)
Pred text
Pred lit/med (literary or media)
Pred wrld
(C)

Pred
"I was basically just thinking what words to say because I know it's about a family."// "So it's going to be about something electronic."
I: (First, before reading, what are you thinking, before beginning to read?) S:(That this story...may be fantasy) I: (It may be fantasy? Why do you say this?) S:(Because I think the story is going to be very funny and things are going to happen that can't possibly happen.)//
I: (OK, here is a story. What do you think before you begin a story? What do you do?) S: (I think about what it is, about what, about what the story is.)//
I: (Before reading what are you thinking when you see...Here is the story; what are you thinking?) S: ¿Qué es el cuento? (What is the story about?)//
I: Are you thinking anything now? S:(a thief). I:(A thief? OK. Why is that?) S: (Because those who wear black clothes are mostly thieves). [could be based on picture and/or word black in text.]
"I'm looking for key words of relatives now because I know it's about a family type thing." [sel. attn. & predict]//
When I read, I try to figure out what I'm reading, what it's about because that generally gives me an idea of what words could possibly be.//
"It sounds like a robot. Maybe he's an engineer or something... school. So maybe...He teaches robotics at a school..."
CUED--does not count I: (What are you thinking?) S: Que en la principio el niño o niña está gritando que oigo un ruido como pío pío. (That in the beginning the boy or girl is yelling that s/he hears a noice like cheep cheep.) I: (What could it be?) [CUE] S: Como las pajaritos? (Like the little birds?)//
I: [CUE] (Here we have a story in front of us. When you see this [illustration], what do you think of first? What do you think the story is about?) S: (Um..That it is about...about birds that is on the head of a girl.)//CUE I: (What do you think is going to happen next?)
S: (That they are going, they are going to use her hair for a nest to lay eggs.)
~~"So maybe it's not robots because I don't think they'd be doing the same thing with robots...~~ [ver]~~// First I'm looking at the title an I'm trying to see if I can figure out what the article is about.~~
Pred text
So earlier sentences help me figure out what the next ones are going to be about.//
Pred pic
S: Looks like everybody's getting hurt in the picture, so it might be everybody's getting hurt in this story.

Elab Elaborate
Relating new information to what is already known
Use background knowledge to construct meaning by making or remembering associations/connections
Give info that is not in text
Express a judgment about text situation

☞- **Irrelevant Elaboration**: Immersion only, negative sign (-) after strategy code (e.g., Elabpers-) notes when an elaboration is clearly irrelevant to the task. Do not code when interviewer has cued/encouraged the elaboration before it goes off-task.

Elab pers Comment about related personal experience; express judgment about something in text. Includes aesthetic reaction--emotional response to text content; not explicitly using information to infer. [If they use it to inference, just call it inferencing.]

Elab txt Make a connection between 2 parts of text (connection is not explicit in text); notices text pattern; includes pointing out word that reappears in text.

Elab pic elaborate about pictures

Elab class
Comment on specific class activity/unit that is related to something in text (not general, "We talk about this.")

Elab wrld
Comments about other observations of the world

Elablit/med (literary knowledge) or drawing connection to another text/movie that S has read/seen.

Vispic mental pictures based on something in the text (content/meaning)

Role imagine oneself in character's role

(C)

Elab
I: (And when did you think of such an interesting end?) S: (Because when you dream, when you think about dreams many times, ...you can think about many things like sometimes I think that I, um, tumble down in the dark ... and many people have dreams but some people don't know....) I: (You can do what you want in dreams, then?) S: (Yes. You can make a person do what he wants.)

Elab pers
I generally don't eat potatoes with papaya or chocolate!//I've kind of taken chocolate for granted.//I think of the museum in Washington that I know of with all the dinosaurs, and that's just the closest thing to this, and I just relate it. //Something's wrong with this guy. He's got psychological problems.//So this guy got really lucky.//That's a lot of chocolate. Sweet tooth I guess.//Oh, weird...the Aztecs have a myth about the divine origins of chocolate.// I: What are you thinking about as you read this? S: Getting hungry//Oh, yuck....This is disgusting.// It's pretty interesting.
S:(She looks different when she goes to the bathroom, like when I go to the bathroom. And afterwards, she [comes out?] of the bathroom and hair is very wet and she doesn't have anything.)//S:(And I have one from my greatgrandmother and it is old and now it is very very...it bothers me a lot and it always goes ahhag ahhag because I don't know where the button to turn it off is...)//S: (I am thinking about when in the morning my mother wakes me and I am half asleep and I say, "No, mother, I don't want to go to school.")//S: (crazy..because it says birds on her head.)//S: (...this person has birds on his/her head. It is funny.)//S: ...ame wo kangaeta ra, sakki ga. Watashi wa ame ga suki, to ame dattara hajimete kuroi ame to soshite motto takusan ninatta ra, to, ame ga hutta ra, watashi wa soto ni deta ra, ame wo totte, smiley face ga demasu. (As I was thinking about the rain, a while ago. I like rain, and if it's raining for the first time black rain and if it rains a lot more and, when it rains, and when I go outside, I take the rain and get a smiley face.)// S: (a little strange) I: (uh-huh, what is strange?) S: (because he always carries the umbrella...He must really like the umbrella....When it rains, he runs without using the umbrella even though he gets wet....The umbrella must be really precious.)// S: (...people glance at him, and are thinking that he's crazy.)// S: Yes, and to make a sand castle... I saw one that... was like a bathtub, and it was very big! It had windows and you could see the ocean in the little doors.)

Elab txt S: Oh, so that's where the title came from. I: What are you thinking? What are you looking at? S: Where they're giving the scientific name for chocolate and in parenthesis they've got one of the scientific names means ailment of the gods. So that's where they got the title from.//And that's very familiar as the one up there.//There's that word again.//I'm thinking the story has lots of kakikukeko. And all the first parts of the sentences are in that order.//

Elab wrld It's getting a little more complicated now, like being an American.//I: Does that make you think about anything? S: How different cultures can be. Here we are, we take chocolate for granted. We eat it and buy it in the stores, and they thought it was divine.

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Elab (cont.)	**Elablit/med** And a lot of times the stories are the same, like the animals talk, and I'm not confused by that anymore. And they all have their general themes. So like now I know that this is one of their little mystery ones, like he was Senior Fuentes." [Also **Ilit**]//I just thought of something, the movie "The Invisible Man" I can sort of see the theme. With the color of the skin defining the person, that sort of thing.//S: (Yes...because not all stories start with "One day, Once upon a time...)//I: (How nice. What gave you the idea of writing about pearls?) S: (In my class I read a book about pearls.)//S: (I have, I have many more good ideas after I read a good story by a good author like a story like Red Riding Hood or something like that. I have ideas for a story.) //S: ... maybe, then well, are you like pikapika (glittering), whenever we do the plays and stuff, I hear that word. I: Un. What kind of play? S: Right now we are doing arajin no geki (play of Alladin)....(We did Little Mermaid last year.) // I was thinking that was, like, nice, and **it's kind of like, a poem**.//S: Did you say korokoro?... I: What are you thinking? S: I'm thinking the Japanese.I: Un. Trying to remember what korokoro is? S: Donguri korokoro (An acorn rolls--title of Japanese children's song).
	Elab class
	~~"We studied this"~~//We did something about immigration earlier in the year, and I'm thinking a little bit about that. // We were talking about chocolate in there also. Is that on purpose?//"I just try to remember because we do a lot of stuff with the family and she wrote all the words on the board and I'm trying to picture them." [also viswd]////"I'm like thinking about a ditto we did a long time ago...Like we had to draw ourselves and then we had to make a family tree and label it.//We sort of use it all the time and you sort of know what it means but you don't know exactly word for word...so basically you learn phrases at a time so you don't know what this word means so when you use just that word in a different context it's crazy. You don't know if this means "I" or "have.""//S: (Yes, and when I don't understand a word, I have a paper and I can write what page it is and what sentence and write the word; and the teacher can tell me.)//I: (Then, when she tells you that it is the time to write, you look at your book and look for good ideas?) S: (And afterwards, I make a final good copy.)//S: ...do you know the share?...And they have talking all in Nihongo (Japanese)? And people use that word all the time, and [teacher] puts up words on the side of the blackboard, and you have to use those, and like different words all the time.//I: Ok. What do you usually do when you finish writing? S: I finish it and then, I didn't get collected sometimes or you just give it by yourself, and they turn it in and like, kinyoubi de (on Friday), you get it back with a grade or a mark on.
	Vispic
	I: What are you thinking about when you remember it? S: What it looks like...The object//S:(In my mind I see like, like first, when it says that she gets up early and hears a clock and it says like two on the dot.)//S:(when I was looking at the old man, I thought about him holding a black umbrella).//S:(I'm drawing a picture in my head....The man is embracing an umbrella in the rain....It's a little bit different from this picture....There is a store behind. There is a store and people are playing....The store emerged from "amayadori" [shelter]) I: (From here. The store appeared from around here. What about the people playing?) S: (It came out of my head.)//S: (Fat man is getting old, going outside, with an umbrella, a picture came up to my mind. He went to a street in New York.)
	Role
	I know I'm supposed to be in some Natural History Museum and interested in some prehistoric animals.//This says I ran up the stairs, and I don't see why I would do that any other...if the man just looked at me or anything like that I wouldn't be scared or run up the stairs. [also Iwrld?]

USE SPECIFIC LANGUAGE KNOWLEDGE TO SOLVE PROBLEMS	
L2 knowledge	
Deduction PROBLEM-SOLVE (Related to inference) Applying rules or knowledge of language (grammar rules, parts of speech, roots, prefix/suffix, text structure, sentence structure) to comprehend /solve a problem **Any time student mentions infinitive or root instead of word as it appears in text.** [Includes what we previously coded **Iling & Itxtstr**] (C)	If I knew what "fija" meant, I could tell you what "fijament" meant..That's - ly. "I looked for an instance fijamently..."// I thought of comer and just eating and try to relate it to word that looked familiar because I didn't know what that meant. So I just thought that since it had come it seemed like comer, that verb.//I think it's an idiomatic expression. "And everything changes in Russian (referring to the case system–nominative case) you can just sort of assume." "Plural with the family." "...try and piece it together by its positioning--where it is in the sentence and how it's being used." "That's 'pre'...before...It's a prefix. Well pre in English is before so I'm thinking that maybe it is in Russian. [also cog]"//La problematica es diferente; that's pretty much telling you what is going to happen. What they're going to develop. I guess the sentence structure kind of gives you clues. Like y sobre todos, and then you can see hay multiples combinaciones de and then you get a list of different things...//I'm trying to look at the ending.//(attention to time period [for tense]) (After being told meaning, student makes connection to part of word): S: ...but on this page..., what do they mean by koinu ga (puppy)? (Interviewer probes to find out how student would normally figure it out. S says would look it up or ask teacher.) I: Oh, de kore wa puppy. (This word means puppy.) S: Oh, ok. I: That's what you thought? S: I mean I've heard of inu (dog).
Decode Phonetic decoding as a strategy for reading or writing (e.g., spelling) only. Not fluent pronouncing but trying to crack the code. (when reading aloud, repeating one or more sounds that are not repeated in text, with or without changing the sound; also includes stating emphasis on decoding) **Elementary--code each word the student decodes** **Decode-mn** mentally (emphasis on pronunciation, sound-by-sound) **DecodeChar** character recognition/pronunciation Includes actual pronouncing [May be an important step to recognizing cognates in Russian (& Japanese Hiragana?) because the character system is different from English.] *No longer including char--comments about character system, which were nonstrategic comments tied to low functioning*	"I have to sit there and phonetically spell it out." "I'm trying to see how they are pronounced." **Decode** "When I'm pronouncing them I'm trying to get better at saying the word." Co, corri//Lu, lura, laura//des-per-ta-dor//S: (How to say new words like...)//S: I'm thinking how to pronounce the letters and stuff, and then put to words. First saying all the letter and putting them, and then together.//S: Well this one I don't, I forget this letter, either it's a ro or ru. I: This one? Hai. This is Ro ne. (Ok, this is ro.) S: Ro. Ku-ro-ku, kurokute. [both decode and dechode char?]// I: What are you thinking now? S: About the letters and how to read it.//S: Piensas en palabras. Y piensas en qué puedes, qué, um, qué sonidos hace los um sonidos... (You think about words. And you think about what you can, um, what sounds make the um sounds.) I: ¿LEtras? (Letters?) S: Sí, letras. (Yes, letters.) **Decode-mn** "Say them through my mind. Say each letter." **Decode char** c) "I'm looking at the 'r'." [confuses Я with R] "I'm trying to recognize the letter and putting them together, but it's hard because we're used to cursive, and then I'm like...." [Nothing] ~~"That word..It looks weird." //"That one little thing (u). I don't know what it is." //"...all the different words look like numbers."~~

Substitute Find another way to say it [Often retrospective?]	I: (And if the teacher isn't there, if you are alone?) S: (I am going to write another word.)// I:(Oh, how nice! You thought of another word that means the same tning as chiquita (little); it is pequeña (little [small])
Semantic awareness Knows about alternative meanings and connotations of words	Sometimes words can have two dual meanings [HS] Garou, garou ...[IMM]
L1-L2 knowledge	
Cog explicitly stated that it looks like an English (or another L2) word "It looks like..."; saying the L2 then the L1 cognate; includes student awareness of false cognate problem.	Cog "It sounds like just like calculator."//"They might sound like an English word, and then I'll sort of know what it means" "It sounds a lot like nous in French, which is our, so Our Family." // "It says eléctricas. I guess that's electrical (pause) worker." (DR S2 HS)// ~~"It says tem[?] (tel)."~~
Borrow Say L1 word w/ L2 accent Write an L1 word in katakana Make-up word w/ L2 accent/construction	**Borrow** (Mater)--not Russian word "I have тетяs [aunts with English plural s on end]."
Mix Use L1 word or form (or word from a different L2) when don't know in target language; includes code-switching *[only count for HS speaking & immersion writing]*	**Mix** I: When you don't understand some words, what do yo do? S: Write down in English, and when I go to the teacher, she'll correct over something.// S: Que te gustas, va al, a ir donde hay agua y que le gusta jugan en el sand. That you like, is going to, to go where there is water and that she likes to play in the sand).//

MANIPULATE INFORMATION	
Retell Paraphrase/restate text; includes stating just a few parts	S: (The girl heard a noise very close to her, and she ran to the mirror. //S: (In the end, like...like...she can't believe that there were birds on her head.)//S: (**Just now the old man is running holding the umbrella with his jacket**, and people glance at him, and are thinking that he's crazy.) [last part is interpretation; I don't think it was in the text.]//CUE [Doesn't count]: (Then, what happens first in the story?)

Summarize
Restating <u>main ideas</u> of the text to give a sense of the text as a whole (contrast w/ inference; may be overlap). Requires selection of important points from everything S understood
EVALUATE IN MODEL
[May get confused w/ transl, I]
(e.g., after reading long passage; code even if seems to be for interviewer benefit)
"It's talking about.."
"They're saying...."
"It has something to do with..."
(C)
	~~"[Title] It's about somebody's family."~~ [Inference]
	~~"...So they live near Moscow."~~ [Inference]
	~~"...So he's 60 and his mother's name is.... And she's 57 years."~~ [SA ideas/phrases]
	[Most of what was coded as summary before would now probably be considered retelling.]
	~~[prompted] I: Can you tell me what you understood?~~
	S: (The person gets up early every day to go to school and this time she doesn't because she hears like cheep cheep on her head.)//
	S: (in Japanese--The man is very fine, and he had an umbrella, which was like a slender and glittering stick, and the man wears black clothes, and although it doesn't say about the black clothes, but I saw it in the picture. He always took the umbrella with him. He took it everywhere. Oh, he always went out with the umbrella.)//
	S: (Since the man didn't want the umbrella to get wet, he didn't open the umbrella until the rain stopped.)//

Translate (- if clearly incorrect)
[PLANNING in production; PROBLEM-SOLVING for compr?]
Using L1 to comprehend target language (problem-solving) and grapple with meaning OR
Generate ideas in L1, then try to translate it to target language Think of content in English, then figure out how to write it in L2
Code when S mentions translating. Lower levels translate the few words they can, and this is strategic; code each word/phrase S translates. Higher levels if continually translating--recode whenever interrupted by another strategy.
[Not a strategy when it's an automatic process--don't code when verbatim and fluid or when seems to be done for interviewer's benefit]
Metranslation
includes student talking about need to switch word order; stating that words can have more than one meaning. **May overlap w/**
Deduction--syntax
Note at top of transcript whether S translates throughout--general description of how S is translating.
(C)
	Metatrans
	dividing into words and putting them together into English (restructuring?)//(word order) jumbled up
	Trans
	"I'm thinking of my favorite relative is my sister...."
	"I want to say how old they are."
	"I'm trying to figure out how to say what school I go to."
	S: Como unas veces yo..cuaondo estás leyendo..tratas hacer hacerlo en inglés, como cuuando lees estás pensando en mi mente, qué es estas palabras en inglés. (Like sometimes I...when you are reading...you try to do, to do it in English, how when you read you are thinking in my mind, what is these words in English?)//
	S: Um, wathasi (I) wa trying to translate desu (be). (I try to translate.)
	S: (First I think in English, and later I think about writing in Spanish.)

Appendix B. Teacher Rating Form

TO: TEACHERS OF PARTICIPATING SCHOOLS IN GEORGETOWN UNIVERSITY LANGUAGE PROJECT LEARNING STRATEGIES IMMERSION PROGRAM

FROM: Georgetown University Language Research Project

RE: RATING YOUR STUDENTS' PROFICIENCY IN YOUR CLASS

DATE:

As part of the research study on learning strategies in immersion language training, we need to collect information on the language proficiency of the students in your class. Your ratings for each student should be based on the criteria provided and independent of how you rate other students in the class (e.g., For instance, if you have an exceptional class, you may rate half of them as one or if you have a poor class you may rate a majority as threes).

Scale

H = High (Exceeds expectations)

A = Average (Meets expectations)

L = Low (Fails to meet expectations)

If possible, please make a copy of your class roster. Then write H, A, or L next to students' names to indicate your rating. If there are any serious mitigating circumstances such as health or family problems that you may be aware of that could possibly affect a student's capacities, place an asterisk by the student's name.

Thank you very much for taking the time to help us with this research.

Appendix C.

IMMERSION THINK-ALOUD INTERVIEW SCRIPT

Begin in L2, switching to English and L2 if student does not understand.

IDENTIFYING INFORMATION

1. Hello, my name is _____ (interviewer's name).
2. What's your name?
3. How old are you?
4. When is your birthday?
5. What's the name of your teacher?
6. Does anyone at home speak (L2)? Who? When do you speak (L2) with (person named)?
7. Do you like (L2)? Is it easy or hard to learn (L2)? How do you think you're doing?

INTRODUCTION - *Say in L2, then in English*

I want to find out about the kinds of things you are thinking about when you're learning. I brought some activities for you to do, and I'd like you to tell me what you're thinking as you do them. This isn't a test, and there are no right or wrong answers! What's really important is finding out the kinds of things you're thinking, so I can help other students be good learners.

We will do four different things: A puzzle, a problem, a little reading and a little writing. After each activity I'll ask you to (open an envelope/turn over a cup) and you'll find a little prize. This is to thank you for helping us. Okay? Do you understand? *(Briefly answer any questions the student asks.)*

I. INTERVIEWER MODELS THINKING ALOUD WITH A PUZZLE

Puzzle is on table and the pieces are out. SPEAK IN L2 FIRST AND THEN ENGLISH.

First I'm going to show you what I mean by thinking aloud. I'm going to try to do this puzzle. Do you like puzzles? Well, I'm going to tell you what I'm thinking while I work on this puzzle. Listen very carefully to what I say about how I do the puzzle. Afterwards you can tell me what you heard me say.

Use the memorized modelling script as you begin solving the puzzle. At the end of the memorized script, continue the interview:

Now, can you remember some of the things I said as I was thinking aloud?

Reinforce answers and give feedback. Example: "That's right, I did say that I looked at the corners." *USE L2 FIRST, IF CHILD USES L1, THEN MIX L2 AND*

L1.

Closure: That was very good. *Let student select prize.*

II. PRACTICE WITH T-SHIRTS LOGIC PROBLEM - *USE L2, THEN L1*

Now its your turn. I'm going to show you a problem. Remember, it doesn't matter if you get the answer or not - what I really want to know is what you are thinking. You can tell me in (L2) or in English - or in both!

Give student the logic problem sheet.

There is a boy named Gus. He likes this T-shirt, but he doesn't like these t-shirts. He likes one of these t-shirts. Can you figure out which one he likes? Before you start, what are you thinking? Doing?

*Probe normally following student's lead in language, using L2 as much as possible. Each time student responds with an answer that reveals strategy give positive feedback by repeating what student said, and/or probe further by asking "*Why are you looking at the numbers? How did you figure that out? *Ask:* Some people think in English, some in (L2), some in a mixture. What do you do? When?

Closure: Thank you, you have some good ideas/ your ideas are very interesting and useful. Is there anything else you want to tell me now about what you were thinking? You can tell me in (L2) or in English. *Let student select prize.*

III. READING TASK (5-10 mins)

Now, I'd like you to read to me a little bit and tell me what you are thinking.

Give student story and indicate lines marked for oral reading.

Before you start reading, what are you thinking? Now, please read to here *(indicating end line)* out loud.

(a) If student can read the text, say: What are you thinking? Now, continue reading. You can read aloud or silently. It's up to you.

Interrupt to ask prompts (see list of prompts). At the end of a section or page, ask:

Are there any words you did not understand? Show me. What did you do? *If student says that he/she understood all the words, point to a difficult word and ask:* Did you understand that word? How did you figure it out? *Ask:* Some people think in English, some in (L2), some in a mixture. What do you do? When?

Closure: I think that's all we have time for. What are you thinking right now? Thank you, you did a good job. Is there anything else you can tell me about what you

were thinking? (in English) *Let student select prize.*

(b) If student cannot read the text, say: Now, let's try another story. *Give the student the next easier text. Say:* What are you thinking? *Continue as in (a).*

(c) If student can read the text very easily, say: That was very good. *Give student the next harder text. Say:* Now, please read these lines to me. What are you thinking? *Continue as in (a).*

IV. WRITING TASK (5-10 mins)

Give student paper and pencil.

Now I'm going to show you some pictures and ask you to write a story in (L2) about one of them. How do you feel about that?

Put out the 6 pictures and as you do this say: I'm going to let you have just one minute to choose a picture, okay? *When student has chosen, put the other pictures away. If she/he has not chosen in 1 minute, insist on a choice:* Okay, time is up. Which one?

Why did you choose that picture? Before you start writing, what are you thinking now?

If the child can't write in L2 and does not spontaneously start talking about the picture in L2, say: Can you tell me your story in (L2)? *If not, let student brainstorm in English briefly, but bring him/her back to spoken L2. Encourage students to try to write something.*

If student wants to change the picture, let her, but do not spend a lot of time on it.

Continue to ask the student what he/she is thinking while writing (see list of prompts). Ask: Some people think in English, some in (L2), some in a mixture. What do you do? When?

Closure: I'm sorry but we have to stop now. What are you thinking right now? You have told me interesting things about how you think when you write. Is there anything else you would like to tell me about what you were thinking while you were writing? *Let student select prize.*

Say in L2 or English, or both: Is there anything else you want to tell me about what you were thinking during any of these activities? Thank you very much. You have been very helpful, and I've really enjoyed talking with you.

PROMPTS TO HELP STUDENTS THINK ALOUD

TIMES WHEN PROMPTS ARE USEFUL:

-At the very beginning of a task. (Gets at planning and general task strategies).

"What are you thinking?"
"What are you doing?"

-Probe when subject is working on pronunciation of a word. (Gets at decoding and recoding strategies)

"Why are you saying "ssss?"
"Why are you closing your eyes?"

-Probe Ss (in response to something they say) about why they understand something that is unstated in the text which suggests that they are making inferences and /or elaborations beyond the text.

"How did you know (figure out) that...."

-To get started/when S is silent: Broad prompts:

Timing: Make sure that there is one segment where the S has a chance to read for about a minute without having to answer. Also that there is a segment where you ask a lot of questions close together in time.

What are you thinking about?
What's going through your mind?
How are you doing this?
How are you figuring this out?
What are you looking at? Why?

-Prompts to get more information:

Is there anything else you are thinking?
Can you tell me more?
What were you thinking when you were silent a moment ago?

-Probe in response to something the S does.
STATE FOR THE TAPE WHAT THE ACTION IS

-erasing
-underlining
-closing eyes
-staring into space
-laughing
-looking at pictures
-writing
-moving lips
-making sounds (sounding out)
-putting finger under words
-silence

"Why are you _____ing?"
"Is there a reason you are _____"? "How does that help you?"

-Follow up S's responses with probes:
Restate what S said and then say

"How did you figure that out?"
"Why do you say that?"
"How do you know that ?"
"Why did you change your mind?"
"Why did you decide to write about this?"
"How did you come up with that?"
"Why did you say that?"
"Is that working for you? Does that help you?"

-When student mentions unknown words:

What are you going to do with that word?
So, how will you figure it out?
How would you normally figure that out? (If I were not here?)

-Prompts to follow up statements about strategy. (SUch as "I'm sounding out the letters")

-Do you always do that?
-When do you do that?
-Why do you do that? How does it help you?
-ANY MORE?

-Prompts to use when nothing else works:

(Reading) What have you understood so far? How did you do that?

(Writing) Tell me the story..(later) what can you write from the story?

RATIONALE FOR USING ENGLISH AND L2

It is important that we maintain the same criteria across the different grades and language groups to determine the circumstances under which we will use English and L2 in the think alouds. This ensures that the richness of the reporting of the strategies for each student is not dependent on the student's mastery of L2. Weaker L2 students must have as much opportunity as strong L2 students to observe strategy reporting in the training session and to report their own strategies in the interview. It is also very important to maintain the ambiance of a task in the target language.

-Ask introductory questions in L2. If student doesn't understand repeat the question in English.

-General introduction to strategies. Switch phrase by phrase or sentence by sentence starting with L2 and then repeating what you said in English.

-Modelling - Speak in both L2 and in English. Start by talking in L2, then translate your phrase or sentence, then continue in L2, then translate again.

-When students describe Interviewer's think aloud, they can use English or L2 or mix. Follow the student's lead in the discussion. If the student speaks in L2, you can respond in L2. If the student responds only in English, you might first try responding only in L2. If they do not understand you, then you might respond in L2 and then translate to English. Use L2 as much as possible but it is most important to maintain clear communication.

Student practice - Students use English or L2 or mix as they like. Interviewer responds, gives feedback and probes in L2. If necessary state probe in L2 and then translate to English. Follow the student's lead, but try to use L2 yourself as much as possible.

-Follow the same general directions for the rest of the experiment.

NOTE: DO NOT USE THE TERMS "L1" AND L2" WITH STUDENTS. SAY "ENGLISH," "FRENCH," "JAPANESE," OR "SPANISH."

DETERMINING THE CORRECT READING LEVEL

We are trying to test all students in all languages in all grades at the same personal level of challenge in reading: A level where they are able to read the material but where they are challenged. This should be about half a grade level above their individual reading level. In order to do this, we have reading texts that are geared to average reading at each level (approximately grade 1 through grade 7)..

Mark off on each text the first few sentences. At Level 1 this might just be one or two sentences. At Level 3 it might be three sentences. Perhaps a little more at Levels 4-7. You need enough text to be able to determine whether the student can decode the words and understand what she is reading. Ask student to read this text aloud, and then ask what he/she is thinking. If she/he is obviously having a lot difficulty decoding (about 3-4 errors or serious hesitations/per sentence or more) and doesn't understnd the text, move her to the next easier text. If he/she understands the text and doesn't seem discouraged by the decoding difficulty, then continue. If she/he makes fewer errors and seems to generally understand the text, continue. If he/she makes very few errors or hesitations and understands the text very well, then move her/him ahead to a harder text where you will get more strategy information.

PREPARATION FOR EACH INTERVIEW

1. Memorize the think-aloud modeling script for the dinosaur puzzle.

2. Become thoroughly familiar with the think-aloud interview script so that you can use it unobtrusively during the interview.

3. Be sure you have the following materials:

   - THINK-ALOUD INTERVIEW SCRIPT
   - TAPE AND TAPE RECORDER
   - MICROPHONE & STAND & CORD TO ATTACH TO TAPE RECORDER
   - 5 DIXIE CUPS (FOR YOUNGER CHILDREN) OR 5 ENVELOPES (FOR OLDER CHILDREN) PER STUDENT
   - 4 PRIZES PER STUDENT
   - PAD FOR YOUR NOTES
   - PUZZLE (WITH PIECES OUT AND TURNED DOWN BEFORE INTERVIEW)
   - T-SHIRT LOGIC PROBLEM SHEET (CLEAN COPY)
   - READING TEXTS (WITH BEGINNING PART MARKED OFF ON EACH TEXT, AND WITH NO INDICATION OF GRADE LEVEL THAT STUDENTS CAN SEE
   - 6 PICTURES FOR WRITING PROMPTS
   - LINED PAPER (SQUARED FOR JAPANESE) AND PENCIL AND SURFACE FOR STUDENT TO WRITE

5. Test the tape recorder and tape, and label each tape as follows:

   Student name
   Grade and language
   Teacher's name
   Date (month/day/year)

   Remember to record only one student on each tape side.

THINK ALOUD MODELING SCRIPT FOR DINOSAUR PUZZLE

NOTE: INTERVIEWER NEEDS TO MEMORIZE THIS SCRIPT SO THAT IT WILL SOUND NATURAL. PRACTICE WITH THE ACTUAL PUZZLE PIECES.

HAVE THE PIECES OUT OF THE PUZZLE AND TURNED WITH THE BLANK SIDE UP.

I'm going to show you how I think aloud when I try to do this puzzle. Okay, before I actually start, the first thing I do is try to find a picture of what the puzzle looks like...and on this puzzle there is a picture right on the board. And I see its a picture of several dinosaurs. I assume this is what the pieces will look like and I can use the board as a guide. I also see that it gives the shapes of the pieces and I know this will help me figure out where to put the pieces. Now I'm going to turn the pieces over. I always turn them all over first. *(TURN OVER PIECES)*. Good, the picture is in colour. I can use the colour to help me too. I don't think this will be too too difficult. There are a lot of clues. Now, the first thing I'm looking for are the corners. *(TAKE THE CORNER PIECE WITH THE FERN)* This looks like a corner. Its shape matches the shape here on the board...but the picture is different. I'll try the other corners...no, the shape is different it doesn't do here, or here..or here. *(BACK TO CORRECT PLACE)*. It seems to fit here. I wonder if the picture that the pieces make is different from the picture on the board. Maybe this isn't going to be so easy. But, I see some pieces that look the same as the board...This dinosaur head has got to go here *(PICK UP TYRANNOSAURUS REX HEAD..VERY OBVIOUS)*. Yes, good...Well, this is clearly a more complicated puzzle than I thought at first. I'm happy I got that one piece in place and I'm curious to go on, but we don't have much time so I'll have to stop here. What is important is not whether I do it right or finish, but what is important is whether I told you what I was thinking.

-Can you remember any of the things I told you about what I was thinking?

Appendix D.

Bibliography for French Reading Texts

Kindergarten:

Ben L'Ourson Blanc: Ben Prend son Bain. (1990). Aartselaar, Belgium: Chantecleer.

Grade 1:

Boen, Bruno. Je Lis Deja Bien: Boulou L'Ours. (1990). France: Le Ballon.

Mon Premier Livre de Lecture. (1990). Belgium: Chantecleer.

Grade 2:

Ganzl, F.-L. (1993). "Ou va la Riviere Potok?" Les Belles Histoires. France: Bayard Presse.

Maillard, Claude. (1992) Pigeon-Chien a Disapru. Paris: Editions Rouge et Or.

Samuels, Barbara. (1986). Cesar et Clementine, (Florence Caroma, Trans.). France, Flammarion.

Grade 3:

Chapouton, Anne-Marie.(1990) Les Dragons de la Nuit. Paris: Editions Rouge et Or:

J'Aime Lie: Le Lit Voyageur. (1995). France, Bayard.

Grade 4:

Ayme, Marcel. (1939). Le Chien. France: Gallimard.

Rocard, Ann. (1990). Le Loup qui avait Peur de Tout. Paris: Editions Rouge et Or.

Grade 5:

Ayme, Marcel. (1939). La Patte du Chat. France: Gallimard.

Joubert, J. (1993). A la Recherche de Rat-Trompette. Paris: Neuf en Poche.

Bibliography for Japanese Reading Texts

Grade 1

Bruna, Dick (1984) (Translated by Kyoko Matsuoka). *Shiro, Aka, Kiiro [White, Red, Yellow].* Tokyo: Fukuinkan Shoten: pp.23-24.

Textbook Approved by the Ministry of Education (1992). Aiueo no uta [Aiueo song]. *Shougakkou Kokugo Ichinen Jou.* Gakkou-tosho: pp.12-13.

Grade 2

Hana no michi [Flower road]. (From a textbook approved by the Ministry of Education, but no info on the publisher & Year)

Textbook Approved by the Ministry of Education (1988). Mushi no hanashi [Insect story]. *Shougaku Kokugo Ichi Jou (Revised).* Kyouiku Shuppan: pp.56-59.

Inukaki to kaeru oyogi. (From a textbook approved by the Ministry of Education, but no info on the publisher & Year)

Grade 3

Nagano, Hirokazu (1982). Hitoribocchi no raion [Lonely lion]. Tokyo: Fukuinkan Shoten: pp.1-8.

Doubutsu no akachan [Animal Babies]. (From a textbook approved by the Ministry of Education, but no info on the publisher & Year)

Grade 4

Uchida, Risako (Translation of Ukraine Folktale.) (1992). *Tebukuro [Mittens].* Tokyo: Fukuinkan Shoten.

Kawata, Ken and Yabuuchi, Masayuki (1969). *Shippo No Hataraki [Functions of tails].* Fukuinkan Shoten: pp.1-4.

Grade 5 and over

Sano, Yoko (1989). Ojisan no kasa [The man's umbrella]. *Kaitei Shougaku Kokugo Ichi Ge.* (Textbook approved by the Ministry of Education) Tokyo: Kyouiku Shuppan: pp.4-7.

Textbook Approved by the Ministry of Education (1989). Tane no fushigi [Wonders of seeds]. *Shougakkou Kokugo Ichinen Ge.* Gakkou Tosho: pp.16-17.

Bibliography for Spanish Reading Texts

Grade 1:

Green, Susan and Siamon, Sharon. *Yo Tengo una Mascota.* (1994) San Diego, CA: Dominie Press, Inc.

Grade 2:

"La Casa en la Montaña", *Ventanas.*(1987) Glenview, Illinois: Scott, Foresman and Company.

Fernández, Laura. "Pájaros en la Cabeza", *Ventanas.* (1987) Glenview, Illinois: Scott, Foresman and Company.

Grade 3:

Machado, Ana María. *Camilón. Camilón.* (1987) Madrid, Spain: Orymu, S. A.

"Las Pícaras Hormigas", *¿Puede Ser?.* (1986) Oklamoma City, Oklahoma: The Economy Company.

Grade 4:

Von Meerwall, Marianne. "Los Dibujos Animados", Viajes. (1987) Glenview, Illinois: Scott, Foresman and Company.

Del Hierro a la Cuchara. (1987) México City, México: Fernández Editores, S.A.

"Pinturas de Arena", *Cuentos para Atesorar.* (1986) Oklahoma City, Oklahoma: The Economy Company.

Grade 5:

Roberts, Luemma. "Jane Long", *Relatos para Disfrutar*. (1986) Oklahoma City, Oklahoma: The Economy Company.

Jáuregui, Jesús. "Otros Buenos Amigos", *Nuestros Amigos los Animales*. Bilbao, Spain: Editorial Fehr, S.A.

UPDATED TALLY/RELIABILITY CHECK INSTRUCTIONS

1) Staff member who is not specializing in that language codes the transcript alone first, then sends language specialist coded transcripts and global forms.
[Retrospective] Use brackets for all retrospective strategies comments.
[Ⓟ strategy name] marks retrospective strategies mentioned as a response to probes.
If, in response to a probe, the student actually demonstrates how to use the strategy for the task, that counts as an on-line strategy.
2) Language specialist reviews coded transcripts, marking transcripts with abbreviations (below).
Language specialist also marks **prompts/prompt-follow-ups (*)**
& **probes/probe-follow-ups** (Ⓟ) in transcript margins.
For R^2/D, **put discrepant code in parentheses in transcript**
Example: revision is Itxt, original code Iknwds --> Itxt (Iknwds)
It helps to **tag disagreements/ additions/ exclusions with a post-it note**.
Language specialist also reviews the global form, **noting changes he or she would make by putting his or her initials**, and filling in any blanks.
3) After all transcripts scheduled between a pair have been reviewed, pair meets to resolve Ds and check additions/exclusions, updating the codes in the margins as indicated in *italics*.
Pair also reviews global form to discuss changes. **On globals, be sure final decisions are denoted by checkmarks (differing opinions are noted by the coder's initials).**
4) Language specialist completes tally sheet from margin codes (or arrange for any staff member to do this). For R2/RD, put discrepant code in parentheses after the code agreed upon.

A Agreement:
Reviewer agrees with the code on the transcript.
Reviewer can update by marking incorrect inferences/irrelevant elaborations; still count as agree.
If reviewer thinks a strategy is repeated or continued, but coder had it twice, combine as one instance and count as agreement.

+ Addition:
Reviewer adds a strategy code.

R^2 Revision within Level 2:
Reviewer revises a code to another code in the same level 2 category
(includes 1 being the larger category and the other being a subcategory)

D Disagreement:
Reviewer disagrees w/ code, and revised code is in different level 2 category from original code.
In discussion, mark as RD if decide to revise code OR stay with original code (just add R infront of the D); mark as U if not resolved in 5 minutes.

X Exclusion:
Reviewer excludes a strategy (e.g., believes the item is not a clear case of the strategy).

CODERS: STUDENT: LANG: GRADE:
DATE TALLIED: TRANSCRIPT YEAR: TEACHER: SCHOOL:

READING

A Agree	+ Addition	R^2 Revision within Level 2	D Discrepancy (RD= resolved)	X Exclusion	U Unresolved
	* PROMPTS for READING: Tally of general prompts and their follow-ups [see Cathy's sheet for counting rules]				
	Ⓟ PROBES for READING: Tally of planned probes and their follow-ups				

WRITING

A Agree	+ Addition	R^2 Revision within Level 2	D Discrepancy (RD= resolved)	X Exclusion	U Unresolved
	* PROMPTS for WRITING: Tally of general prompts and their follow-ups [see Cathy's sheet for counting rules]				
	Ⓟ PROBES for WRITING: Tally of planned probes and their follow-ups				

Total Observations of Strategy Use by Immersion Students

STRATEGY AND LEVEL	*READ & WRITE*	*READ*	*WRITE*
TOTAL STRATEGIES	1483	994	489
1. METACOGNITIVE - TOTAL	446	199	247
2. PLANNING - TOTAL	**120**	**13**	**107**
3. PLANNING GENERAL	19	00	19
3. PREVIEWING	02	02	00
4. PREVIEWING (GENRE)	05	04	01
4. PREVIEWING (MAIN)	02	02	00
3.ORGANIZATIONAL PLANNING	09	00	09
3.SECTIONS	03	00	03
4.AID	01	00	01
3. SELF-MANAGEMENT - TOTAL	79	05	74
4. SELF-MANAGEMENT (GENERAL)	19	03	16
4. KNOWLEDGE	03	00	03
5. KNOWLEDGE L2	07	01	06
5 KNOWLEDGE TOPIC/INTEREST	41	00	41
4. DIRECTED ATTENTION	02	00	02
4 READING ALOUD	05	01	04
4. SELF-CUEING	01	00	01
4. REPEATING PATTERN	00	00	00
4. AVOIDING	01	00	01
4. REHEARSAL	00	00	00
2. MONITORING - TOTAL	**204**	**103**	**101**
3. MONITORING (GENERAL)	20	05	15
3. MONITORING (STRATEGY)	03	02	01
3. MONITORING (SENSE)	21	14	07
3. AUDITORY MONITORING	05	03	02
3. VERIFICATION	11	09	02
3. SELF CORRECTION	105	48	57
3. SELF QUESTIONING/ Q VER	39	22	17

STRATEGY AND LEVEL	READ & WRITE	READ	WRITE
2. SELECTIVE ATTENTION-TOTAL	**122**	**83**	**39**
3. SELECTIVE ATTENTION (GENERAL)	06	05	01
3. SA (KNOWN WORDS)	01	01	00
3. SA (KEY WORDS)	00	00	00
3. SA (TITLE)	11	08	03
3. SA (PICTURE)	41	33	08
3. SA (NUMBERS)	00	00	000
3. SA (LINGUISTIC FEATURES)	14	05	09
3. SA (PRONUNCIATION)	12	12	00
3. SKIPPING	06	04	02
4. SKIPPING (LOOKING BACK)	00	00	00
4. SKIPPING (NOT IMPORTANT)	01	01	00
3. REREADING	29	13	16
4. LOOKING BACK	01	01	00
1. COGNITIVE STRATEGIES - TOTAL	1037	795	242
2. BACKGROUND KNOWLEDGE-TOT	**379**	**291**	**88**
BACKGROUND KNOWLEDGE (GEN)	00	00	00
3. INFERENCING-TOTAL	**147**	**143**	**04**
4. INFERENCING (GENERAL)	22	18	04
4. INFERENCING (TITLE)	01	01	00
4. INFERENCING (PICTURE)	65	65	00
4. INFERENCING (NUMBER)	00	00	00
4. INFERENCING (KNOWN WORDS)	11	11	00
4. INFERENCING (TEXT)	39	39	00
4. INFERENCING (LIT. / MEDIA)	01	01	00
4. INFERENING (WORLD KNOW.)	08	08	00
3. PREDICT ION- TOTAL	**56**	**56**	**00**
4. PREDICTION (GENERAL)	06	06	00
4. PREDICTION (TITLE)	04	04	00
4. PREDICTION (PICTURE)	40	40	00
4. PREDICTION (NUMBER)	00	00	00
4. PREDICTION (KNOWN WORDS)	00	00	00
4. PREDICTION (TEXT)	03	03	00
4. PREDICTION (LIT. / MEDIA)	00	00	00
4. PREDICTION (WORLD KNOW.)	03	03	00

STRATEGY AND LEVEL	READ & WRITE	READ	WRITE
3. ELABORATION	**176**	**92**	**84**
4. ELABORATION (GENERAL)	05	03	02
4. ELABORATION (PERSONAL)	38	23	15
4. ELABORATION (TEXT)	04	04	00
4. ELABORATION (PICTURE)	45	38	07
4. ELABORATION (CLASS)	25	13	12
4. ELABORATION (WORLD)	16	04	12
4. ELABORATION (LIT./ MEDIA)	37	07	30
4. VISUALIZING PICTURE	04	00	04
4. IMAGINING ROLE	02	00	02
2. LINGUISTIC KNOWLEDGE	**572**	**440**	**132**
3. LINGUISTIC KNOW (GENERAL)	12	02	10
4. DEDUCTION	14	13	01
4. DECODING	468	421	47
5. DECODING (MENTAL)	00	00	00
5. DECODING (CHARACTER)	01	00	01
4. SEMANTIC AWARENESS	01	01	00
4. SUBSTITUTION	22	00	22
3. L1-L2 KNOWLEDGE			
4. L1-L2 KNOWLEDGE (GENERAL)	01	01	00
4. COGNATES	05	02	03
4. BORROWING	08	00	08
4. MIXING	40	00	40
2. MANIPULATING INFORMATION-TOTAL	**86**	**64**	**22**
3. RETELLING	50	50	00
3. SUMMARIZING	01	01	00
3. TRANSLATING	35	13	22
4. METATRANSLATION	00	00	00

① IMMERSION LEARNING STRATEGIES QUESTIONNAIRE (ILSQ--UPPER GRADES) FRENCH ADMINISTRATION GUIDE

[Instructions in italics.] [SCRIPT FOR ADMINISTRATOR TO READ IS IN SMALL CAPITALS.]

Materials Needed
ILSQ [YELLOW--on top] & ISEQ [GREEN] for each student (check language version)
2 Administration Guides--ILSQ (this document) & ISEQ
Chalkboard, Chalk, Eraser

Directions *Administer ILSQ then ISEQ same day.*
Before starting*, write the following on the chalkboard (fill in appropriate information):*

Date: _____
Teacher: _____
Grade: _____

[Leave plenty of space for writing the line of sample responses (see following page).]
Do not distribute questionnaires until all students are seated.
I'M GOING TO HAND OUT SOME QUESTIONNAIRES.
WHILE I'M DOING THAT, CLEAR EVERYTHING FROM YOUR DESK AND GET OUT A PENCIL.
DON'T TURN THE PAGES YET. WE'RE GOING TO TURN THE PAGES ALL TOGETHER.
Distribute ILSQs (yellow) and ISEQs (green).
DOES EVERYONE HAVE A YELLOW QUESTIONNAIRE, A GREEN QUESTIONNAIRE AND A PENCIL?
IS YOUR DESK CLEAR OF EVERYTHING ELSE? *Make sure all desks are clear.*

WE'LL START WITH THE YELLOW QUESTIONNAIRE.
PRINT YOUR FIRST AND LAST NAME ON THE FRONT OF YOUR YELLOW QUESTIONNAIRE.
COPY THE OTHER INFORMATION FROM THE CHALKBOARD.
Visually confirm that all students write their names & information on questionnaire.

THIS IS NOT A TEST, JUST A WAY FOR US TO FIND OUT ABOUT HOW STUDENTS LEARN.
THIS QUESTIONNAIRE WANTS TO KNOW ABOUT WAYS <u>YOU</u> LEARN AND DO WORK FOR SCHOOL.
THERE ARE NO WRONG ANSWERS.
ANY ANSWER YOU GIVE IS CORRECT AS LONG AS IT'S TRUE **FOR YOU,**
AS LONG AS IT TELLS WHAT **YOU** THINK IS TRUE ABOUT YOURSELF.
WE WANT TO KNOW WHAT **YOU** THINK, NOT WHAT ANYONE ELSE THINKS.

NOW TURN TO PAGE ONE. YOUR PAGE SHOULD LOOK LIKE THIS:
[show your copy of practice page] *Visually confirm that all students are at p. 1.*

TO SHOW YOU ABOUT THE QUESTIONNAIRE, WE'LL DO SOME PRACTICE QUESTIONS TOGETHER. AS WE DO THEM, DON'T TELL ME YOUR ANSWER, JUST MARK IT ON THE QUESTIONNAIRE. I WANT YOU TO ANSWER WHAT IS TRUE FOR YOU.

[Don't erase previous information. Draw the following on the chalkboard:]

Almost Never Sometimes Almost Every Time

THE FIRST QUESTION SAYS, "DURING A SCHOOL DAY, DO YOU HAVE RECESS?" *(YES.)*

IF YOU ALMOST ALWAYS HAVE RECESS, THIS CAN BE EVERY DAY OR ALMOST EVERY DAY THAT YOU HAVE SCHOOL, DRAW A RING AROUND THE FILLED-IN CIRCLE THAT SAYS "ALMOST EVERY TIME." *(circle it on chalkboard, as follows:)*

Almost Never Sometimes Almost Every Time

IF YOU HAVE RECESS SOME SCHOOL DAYS, BUT THERE ARE MANY SCHOOL DAYS THAT YOU DON'T HAVE RECESS, DRAW A RING AROUND THE HALF CIRCLE THAT SAYS "SOMETIMES." *(Circle on chalkboard, erasing previous mark:)*

Almost Never Sometimes Almost Every Time.

IF YOU NEVER HAVE RECESS, OR ALMOST NEVER, DRAW A RING AROUND THE EMPTY CIRCLE THAT SAYS "ALMOST NEVER." *(Circle on chalkboard, erasing previous mark:)*

Almost Never Sometimes Almost Every Time

DOES ANYONE HAVE ANY QUESTIONS? RAISE YOUR HAND IF YOU NEED HELP.

Give students 10 full seconds for all items. Check for difficulties.

If needed, repeat instructions or explain so students understand what to do.

NOW LET'S TRY A COUPLE MORE.

THE SECOND QUESTION SAYS, "DURING A SCHOOL DAY, DO YOU GO TO DISNEYLAND?"

FOR NEVER OR ALMOST NEVER, DRAW A RING AROUND THE EMPTY CIRCLE.

FOR SOMETIMES, DRAW A RING AROUND THE HALF CIRCLE.

FOR ALWAYS OR ALMOST EVERY TIME, DRAW A RING AROUND THE FILLED-IN CIRCLE.

(Pause) THE THIRD QUESTION SAYS, "DURING A SCHOOL DAY, DO YOU HAVE MUSIC CLASS?" DRAW A RING AROUND YOUR ANSWER--ALMOST NEVER, SOMETIMES, OR ALMOST EVERY TIME.

DOES ANYBODY HAVE ANY QUESTIONS ABOUT HOW TO DO THIS? *(Pause)*

If needed, re-explain instructions or model how you would answer other sample items.

GOOD. NOW WE'RE READY TO ANSWER SOME QUESTIONS ABOUT WHAT YOU CAN DO IN FRENCH. TURN TO PAGE 2.

FOLLOW ALONG AS I READ THE QUESTIONS OUT LOUD.

THESE FIRST QUESTIONS ARE ABOUT READING IN FRENCH.

"LISTED BELOW ARE SOME THINGS THAT YOU MIGHT OR MIGHT NOT DO TO HELP YOU UNDERSTAND WHAT YOU ARE READING IN FRENCH. FOR EACH ONE, CIRCLE WHETHER YOU DO IT ALMOST NEVER, SOMETIMES, OR ALMOST EVERY TIME. **TELL WHAT YOU REALLY DO, NOT WHAT YOU THINK YOU SHOULD DO.**"

FIND QUESTION R 1.
"BEFORE YOU READ IN FRENCH, DO YOU TRY TO FIGURE OUT WHAT IT WILL BE ABOUT?"
CIRCLE YOUR ANSWER--ALMOST NEVER, SOMETIMES, OR ALMOST EVERY TIME.

For reading remaining questions:
State item letter & number.
Read question.
Repeat question when you think students need it.
Cue page turns and state page number.

For comment sections:
IF YOU CAN THINK OF SOME THINGS YOU DO FOR _*[READING]*_ FRENCH THAT WE HAVEN'T THOUGHT OF, WRITE THEM ON THE LINES. YOU CAN WRITE IN EITHER ENGLISH OR FRENCH, WHICHEVER IS EASIER FOR YOU.
(Watch students, and ask if everyone's done. Allow maximum of 3 minutes.)

(If students ask what to put if there's nothing else they do, tell them they can leave it blank.)

For switching sections:
THE NEXT GROUP OF QUESTIONS IS ABOUT *(READING/LISTENING/SPEAKING/WRITING)* IN FRENCH.
(Read the description.)

If students are leaving items blank, say to the class:
MAKE SURE YOU GIVE AN ANSWER TO EVERY QUESTION. REMEMBER, THIS IS NOT A TEST.

////////////

① WAYS I LEARN

FRENCH IMMERSION

(Name in English)

Last Name: ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

First Name: ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

Date: _____

Teacher: _____

Grade: _____

Practice Questions

P 1. **During a school day, do you have recess?**

Almost Never

Sometimes

Almost Every Time

P 2. **During a school day, do you go to Disneyland?**

Almost Never

Sometimes

Almost Every Time

P 3. **During a school day, do you have music class?**

Almost Never

Sometimes

Almost Every Time

Reading French

Listed below are some things that you might or might not do to help you understand what you are reading in French. For each one, circle whether you do it Almost Never, Sometimes, or Almost Every Time. Tell what you really do, not what you think you should do.

R 1. **Before you read in French, do you try to figure out what it will be about?**

Almost Never *Sometimes* *Almost Every Time*

R 2. **While you read in French, do you decide how important each part is?**

Almost Never *Sometimes* *Almost Every Time*

R 3. **When you read in French, do you imagine pictures in your head or imagine you are part of the story?**

Almost Never *Sometimes* *Almost Every Time*

R 4. **If something doesn't make sense when you read in French, do you go back and try to understand it?**

Almost Never *Sometimes* *Almost Every Time*

R 5. **When you read a French word you don't know, do you try to figure out its meaning by looking at the rest of the story?**

Almost Never *Sometimes* *Almost Every Time*

R 6. **When you read a French word you don't know, do you use a dictionary, class charts, or notes to figure out its meaning?**

Almost Never *Sometimes* *Almost Every Time*

R 7. **When you read a French word you don't know, do you try to think of an English word that sounds like the French word?**

Almost Never *Sometimes* *Almost Every Time*

R 8. **After you read in French, do you check if you were right about what you thought would happen?**

Almost Never *Sometimes* *Almost Every Time*

R 9. **After you read something in French, do you think about how well you understood it?**

Almost Never *Sometimes* *Almost Every Time*

What other things do you do to help you when you are reading French?

_____

_____

_____

_____

Listening to French

Listed below are some things that you might or might not do to help you understand what you are hearing in French. For each one, circle whether <u>you</u> do it Almost Never, Sometimes, or Almost Every Time. Tell what you <u>really</u> do, not what you think you should do.

L 1. **Before you listen to French, do you try to figure out what the person will talk about?**

Almost Never *Sometimes* *Almost Every Time*

L 2. **When you listen to a story in French, do you imagine pictures in your head or imagine you are part of the story?**

Almost Never *Sometimes* *Almost Every Time*

L 3. **If you don't understand something you hear in French, do you ask a question or ask the person to repeat?**

Almost Never *Sometimes* *Almost Every Time*

L 4. **Do you try to figure out the meanings of words you don't understand when you are listening to French?**

Almost Never *Sometimes* *Almost Every Time*

L 5. **After you hear something in French, do you check if you were right about what you thought the person would say?**

Almost Never *Sometimes* *Almost Every Time*

L 6. **After you hear something in French, do you think about how well you understood it?**

Almost Never *Sometimes* *Almost Every Time*

What other things do you do to help you when you are listening to French?

_____

_____

_____

_____

Speaking French

Listed below are some things that you might or might not do to help yourself speak in French, like if you present a report, answer questions in class, or have a conversation. For each one, circle whether <u>you</u> do it Almost Never, Sometimes, or Almost Every Time. Tell what you <u>really</u> do, not what you think you should do.

S 1. **Before you speak in French, do you think about what you want to say?**

Almost Never *Sometimes* *Almost Every Time*

S 2. **Before you speak in French, do you think of what you know about the topic?**

Almost Never *Sometimes* *Almost Every Time*

S 3. **When you speak in French, do you look at the listeners to see if they understand you or if they are interested?**

Almost Never *Sometimes* *Almost Every Time*

S 4. **If you realize you said something wrong or confusing in French, do you explain it again or correct yourself?**

Almost Never *Sometimes* *Almost Every Time*

S 5. **If you can't think of the French word you want, do you think of another way to say it in French?**

Almost Never *Sometimes* *Almost Every Time*

What other things do you do to help you when you are speaking French?

_____

_____

_____

_____

Writing in French

Listed below are some things that you might or might not do to help you write in French. For each one, circle whether you do it Almost Never, Sometimes, or Almost Every Time. Tell what you really do, not what you think you should do.

W 1. **Before you write in French, do you think about what you want to say?**

Almost Never *Sometimes* *Almost Every Time*

W 2. **Before you write in French, do you think of what you know about the topic?**

Almost Never *Sometimes* *Almost Every Time*

W 3. **When you write in French, do you think about what information is most important to write about?**

Almost Never *Sometimes* *Almost Every Time*

W 4. **Do you imagine or draw a picture to help you write in French?**

Almost Never *Sometimes* *Almost Every Time*

W 5. **When you are writing, if you can't think of the French word you want, do you think of another way you can say it in French?**

Almost Never *Sometimes* *Almost Every Time*

W 6. **When you write in French, do you use a dictionary, charts, posters, or your notes?**

Almost Never *Sometimes* *Almost Every Time*

W 7. **Do you try to remember how to write French words by <u>seeing</u> the word or letters in your mind?**

Almost Never *Sometimes* *Almost Every Time*

W 8. **Do you try to remember how to spell French words by <u>hearing</u> the word in your mind?**

Almost Never *Sometimes* *Almost Every Time*

W 9. **After you write in French, do you read it over to see if everything makes sense?**

Almost Never *Sometimes* *Almost Every Time*

W 10. **After you write in French, do you check your spelling and grammar?**

Almost Never *Sometimes* *Almost Every Time*

What other things do you do to help you when you are writing French?

② IMMERSION SELF-EFFICACY QUESTIONNAIRE (ISEQ--UPPER GRADES) FRENCH ADMINISTRATION GUIDE

[Instructions in italics. SCRIPT TO READ ALOUD IN SMALL CAPITALS.]

Materials Needed *(see ILSQ, which is administered first)*

Directions

NOW FIND THE GREEN QUESTIONNAIRE.
DON'T TURN THE PAGE YET. WE'RE GOING TO TURN THE PAGES ALL TOGETHER.
Visually confirm that all students have ISEQ ready,
and that only the questionnaires and a pencil are on each desk.
PRINT YOUR FIRST AND LAST NAME ON THE FRONT OF YOUR GREEN QUESTIONNAIRE.
FILL IN THE OTHER INFORMATION FROM THE CHALKBOARD.
Visually confirm that all students write their names on the questionnaire.

LISTEN WHILE I TELL YOU ABOUT THIS QUESTIONNAIRE.
IT'S A LITTLE DIFFERENT FROM THE FIRST ONE.
THIS IS NOT A TEST, JUST A WAY FOR YOU TO TELL HOW YOU FEEL ABOUT
YOUR READING, LISTENING, SPEAKING, AND WRITING IN FRENCH.
LIKE THE OTHER QUESTIONNAIRE, THERE ARE NO WRONG ANSWERS.
ANY ANSWER YOU GIVE IS CORRECT AS LONG AS IT'S TRUE,
AS LONG AS IT TELLS WHAT **YOU** THINK IS TRUE ABOUT YOURSELF.
WE WANT TO KNOW WHAT **YOU** THINK, NOT WHAT ANYONE ELSE THINKS.

NOW TURN TO PAGE ONE.

YOUR PAGE SHOULD LOOK LIKE THIS: *[show practice page on your copy]*
Visually confirm that all Ss are at p.1.

TO SHOW YOU ABOUT THIS QUESTIONNAIRE, WE'LL DO SOME PRACTICE QUESTIONS TOGETHER.
AS WE DO THEM, DON'T TELL ME YOUR ANSWER, JUST MARK IT ON THE QUESTIONNAIRE.
I WANT YOU TO ANSWER WHAT IS TRUE FOR YOU.

THE INSTRUCTIONS SAY, "FOR EACH QUESTION, CIRCLE THE ANSWER THAT TELLS HOW SURE YOU ARE THAT YOU CAN DO THIS."
THE FIRST QUESTION ASKS, "CAN YOU WALK ACROSS THE ROOM?"
THAT MEANS "ARE YOU STRONG ENOUGH TO WALK ACROSS THE ROOM?"
MY CHOICES ARE:

NO WAY--THAT MEANS I CAN NOT DO IT
PROBABLY NOT--THAT MEANS I DON'T THINK I CAN WALK ACROSS THE ROOM BUT THERE'S SOME CHANCE
MAYBE--MAYBE I CAN WALK ACROSS THE ROOM, BUT MAYBE NOT
PROBABLY--I'M PRETTY SURE I CAN WALK ACROSS THE ROOM
DEFINITELY--THAT MEANS I KNOW I CAN WALK ACROSS THE ROOM.

CAN I WALK ACROSS THE ROOM? OF COURSE! I DEFINITELY CAN WALK ACROSS THIS ROOM.
I'M GOING TO DRAW A CIRCLE AROUND THE WORD "DEFINITELY." *[show on your copy]*
YOU CIRCLE THE ANSWER THAT IS TRUE FOR YOU. CAN YOU GO ACROSS THE ROOM?
YOU DON'T NEED TO TELL YOUR ANSWER, JUST MARK IT DOWN.
DOES ANYONE HAVE ANY QUESTIONS?
RAISE YOUR HAND IF YOU HAVE A QUESTION OR NEED HELP.

Give 10 full seconds for students to finish each item throughout questionnaire.
Check for difficulties.
If needed, repeat instructions or explain so students understand what they are to do.

NOW LET'S TRY A COUPLE MORE.
THE SECOND QUESTION IS, "CAN YOU SAY THE ALPHABET BACKWARDS?"

FOR QUESTIONS LIKE THIS ONE, DON'T TRY TO DO IT, JUST PUT WHAT YOU THINK.

DOES EVERYONE HAVE AN ANSWER?

OKAY NUMBER THREE, "CAN YOU LIFT UP A HOUSE WITH YOUR BARE HANDS?"

DOES ANYBODY HAVE ANY QUESTIONS ABOUT HOW TO DO THIS? *(Pause)*
If needed, re-explain instructions or model how you would answer other practice items.

GOOD.
NOW WE'RE READY TO ANSWER SOME QUESTIONS ABOUT WHAT YOU CAN DO IN FRENCH.
NOW TURN TO PAGE 2.

② WHAT I AM LIKE AS A STUDENT

FRENCH IMMERSION

Name in English:

Last: ☐☐☐☐☐☐☐☐☐☐☐☐☐☐

First: ☐☐☐☐☐☐☐☐☐☐☐☐☐☐

Date: _____

Teacher: _____

Grade: _____

Practice Questions

For each question, circle the answer that tells how sure you are that you can do this.

P 1. **Can you walk across the room?**

No Way *Probably Not* *Maybe* *Probably* *Definitely*

P 2. **Can you say the alphabet backwards?**

No Way *Probably Not* *Maybe* *Probably* *Definitely*

P 3. **Can you lift up a house with your bare hands?**

No Way *Probably Not* *Maybe* *Probably* *Definitely*

Reading French

Pretend your teacher gives you something new to read in class today. For each question, circle the answer that tells how sure you are that you can do this while reading in French.

R 1. **When you read in French, can you figure out the most important information?**
No Way *Probably Not* *Maybe* *Probably* *Definitely*

R 2. **If you read something in French in class today, can you answer questions about it?**
No Way *Probably Not* *Maybe* *Probably* *Definitely*

R 3. **When you read in French, can you figure out what new French words mean?**
No Way *Probably Not* *Maybe* *Probably* *Definitely*

R 4. **After you read something in French, can you explain it to someone?**
No Way *Probably Not* *Maybe* *Probably* *Definitely*

R 5. **Can you understand written directions in French?**
No Way *Probably Not* *Maybe* *Probably* *Definitely*

Listening to French

Pretend you are listening to your teacher explain something in French. For each question, circle the answer that tells how sure you are that you can do this when you listen to French.

L 1. **When you listen to French, can you figure out the most important thing the teacher is saying?**
No Way *Probably Not* *Maybe* *Probably* *Definitely*

L 2. **After you hear something in French, can you answer questions about what you heard?**
No Way *Probably Not* *Maybe* *Probably* *Definitely*

L 3. **When you listen to French, can you figure out what new French words mean?**
No Way *Probably Not* *Maybe* *Probably* *Definitely*

L 4. **After you hear something in French, can you explain it to someone?**
No Way *Probably Not* *Maybe* *Probably* *Definitely*

L 5. **Can you understand spoken directions in French?**
No Way *Probably Not* *Maybe* *Probably* *Definitely*

Speaking French

Pretend you have to explain something to your teacher and classmates in French. For each question, circle the answer that tells how sure you are that you can do this when you speak French. Remember to answer what <u>you</u> think is really true for you.

S 1. **Can you say your most important ideas in French?**
No Way *Probably Not* *Maybe* *Probably* *Definitely*

S 2. **Can you say most of your ideas in French?**
No Way *Probably Not* *Maybe* *Probably* *Definitely*

S 3. **Can you figure out what to do when you don't know how to say something in French?**
No Way *Probably Not* *Maybe* *Probably* *Definitely*

S 4. **Can you figure out if people understand what you are saying in French?**
No Way *Probably Not* *Maybe* *Probably* *Definitely*

S 5. **Can you figure out what to do when someone doesn't understand what you are saying in French?**
No Way *Probably Not* *Maybe* *Probably* *Definitely*

S 6. **Can you say something in French that a French person would understand?**
No Way *Probably Not* *Maybe* *Probably* *Definitely*

Writing French

Pretend you have to write something in French in class. For each question, circle the answer that tells how sure you are that you can do this when you write in French.

W 1. **Can you write the most important ideas in French?**
No Way *Probably Not* *Maybe* *Probably* *Definitely*

W 2. **Can you write most of your ideas in French?**
No Way *Probably Not* *Maybe* *Probably* *Definitely*

W 3. **Can you figure out what to do when you don't know how to write something in French?**
No Way *Probably Not* *Maybe* *Probably* *Definitely*

W 4. **Can you figure out if people will understand what you are writing in French?**
No Way *Probably Not* *Maybe* *Probably* *Definitely*

W 5. **Can you figure out what to do when someone doesn't understand what you wrote in French?**
No Way *Probably Not* *Maybe* *Probably* *Definitely*

W 6. **Can you write something in French that a French person would understand?**
No Way *Probably Not* *Maybe* *Probably* *Definitely*

Appendix I.

Teacher Interview Guide--Spring 1995

Be sure to tape identifying information--
interviewer, teacher, school, date/year.

You've been participating in strategies instruction research for awhile now, and we would like your input on how it has been working. The main question I want to ask is:

What kinds of impact, if any, has learning strategies instruction had on your students?

After teacher is finished talking about impact, ask:

Do you think strategies instruction helps students become more effective language learners?

If teacher says yes, ask:
What evidence has shown you that strategies instruction is working for your students?

In your opinion, why has strategies instruction helped your students?

If teacher says no, ask:
What evidence has shown you that strategies instruction is not working for your students?

In your opinion, why has strategies instruction not helped your students?

We're also interested in addressing teachers' specific needs for professional development with strategies instruction. What we would like to know from you is:

What language-specific teacher development is necessary in learning to teach strategies?

What level-specific teacher development is necessary in learning to teach strategies?

Thanks so much for your input and your work with strategies. Your participation is vital to helping us understand and improve language instruction.

Sachiko: A Very Good Thinker

Meet Sachiko.
Sachiko is a very good thinker. She uses her mind to help her do all the things she wants to do.

Sachiko wants to climb Mt. Fuji. Mt. Fuji is very big. It will be a very long trip. Sachiko will have to think hard to climb the mountain. But Sachiko is a very good thinker. She knows that before she can start to climb Mt. Fuji, she has to PLAN for the trip.

Before her trip, Sachiko has to decide how high she wants to climb.
She sets a goal: "I want to climb all the way to the top of Mt. Fuji!"

Sachiko knows a lot about Mt. Fuji.
Before her trip, she asks herself, "What do I remember about Mt. Fuji?"
She studies her map of trails to help her remember all the things she knows about Mt. Fuji.

Before her trip, Sachiko has to think about what she needs to pack in her backpack. She predicts what will happen on her long trip so she knows what to pack. She asks, "What might happen? I might get hungry; I'll pack some peanut butter. I might get thirsty; I'll pack some water. I might get cold; I'll pack a coat. I might get tired; I'll pack a blanket."

Sachiko decides to pay attention to hard parts of the climb. She asks, "What do I need to watch out for? I know there are some streams that I have to cross. I will watch out for them. I'll pack a rope to be ready for them."

Now Sachiko is ready to start climbing. Sachiko is a very good thinker. As she climbs, she needs to check how well she is doing. She needs to help herself so she can keep climbing.

Sachiko looks at the signs to see how far she has climbed.
She looks at her map to make sure she is on the right trail.

Sachiko asks herself questions to see if everything is ok:
She asks, "How am I doing?" "Am I tired?" "Am I thirsty?"

When she is climbing, Sachiko remembers what she knows about this mountain.
She thinks about what she does to help her climb other mountains.

Sachiko sees a picture of Mt. Fuji in her mind and thinks about what she has to do. She looks up to see how far she has to climb. "Am I almost there?"

When she gets scared, Sachiko tells herself "I can do it."

Sometimes Sachiko meets other climbers. They share climbing stories. They help each other.

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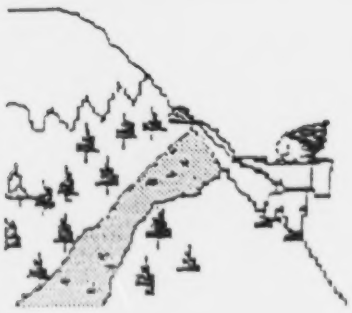
Sometimes climbing gets difficult.
There are streams to cross.
There are big cliffs.
There are strong winds.
But Sachiko is a very good thinker.
She can solve her problems.
When Sachiko comes to the stream, she needs to choose how to solve her problem.
What could Sachiko do?
She could use the map to find another trail.
She could ask another climber to help her walk across.
She could think about how she crosses other streams.
Sachiko will use her rope to get across the big stream.



Because Sachiko is a very good thinker, she thinks about how well she did.
After she crosses the stream, Sachiko asks herself,
"Was my rope a good tool to cross the stream?
Should I use a rope next time I cross the stream?"

Sachiko thinks and climbs, thinks and climbs.
Finally, she reaches the top of Mt. Fuji!
Sachiko is very happy.
She looks around and thinks about her climb.
She thinks about everything she did to help her climb Mt. Fuji.
She asks herself, "How well did I do?"
"I packed enough water, but I would have liked more peanut butter.
I will remember next time."
"I used good tools to cross the stream."
"I learned about how to climb a new mountain."
"And most important, I met my goal."

Sachiko is a very good thinker.
She climbed all the way to the top of Mt. Fuji.

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